



U.S. Chamber of Commerce
Foundation

T3 INNOVATION
NETWORK

Education Design Lab

Experience You

Phase 1 Demonstration Report

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Executive Summary

Learning and Employment Records (LERs) are well positioned to revolutionize skills-based hiring and digitally transform the global talent marketplace. While the potential of LERs is compelling, most current initiatives have primarily centered on creating and securely sharing records based on recent learning and employment experiences. This work is undeniably crucial. However, to achieve widespread adoption and transformative impact, it's essential to address the gap in providing LERs for all workforce participants, while including the past education and employment experiences of over 160 million U.S. workers. We believe that for LERs to truly reshape the talent marketplace, we must recognize and incorporate everyone's past achievements.

The hypothesis to solve for this gap was simple: has artificial intelligence (AI) matured enough to translate past experiences captured in unstructured formats, into structured records conducive to an LER? While the hypothesis was simple, the growing generative AI landscape presented many unknowns. Would AI have the ability to understand the great diversity of experiences and unstructured formats that career-relevant learning and employment are often captured in, including websites, PDFs, resumes, and transcripts? Could AI extract meaningful data and produce a structured LER of sufficient value to learners and employers?

Over the past 10 months, 'Experience You', a chartered T3 Innovation Network initiative, has been met with an outpouring of support, enthusiasm, and determination from the community. We launched this initiative with the goal of fostering transformative impact, and the community demonstrated that great and exciting things are on the horizon. Reaching our Experience You goals was made possible by eight project teams, spanning 20 organizations. Each of the project teams were able to demonstrate that AI can generate LERs at scale for the current workforce and their diverse approaches have laid a strong technical, and human, foundation for future data transformation, and skills data enhancement. The U.S. Chamber of Commerce Foundation, Education Design Lab, and our Experience You partners are excited to explore future phases of Experience You as we seek to collaboratively create systems change for those who need it most.

Our ambitious vision — to catalyze the creation of tools that could generate up to 25 million self-asserted LERs, encompassing over 250 million machine-actionable skills — once seemed like a distant dream. Now, it's a tangible goal within our reach.

We would like to thank the **Bill & Melinda Gates Foundation** for their support of this project, the larger **T3 Innovation Network**, and its funders for helping seed this ambitious project. And, thank you to those who joined us as demonstration teams, advisors, community members, and supporters.



Jason A. Tyszko, Senior Vice President of Policy and Programs,
U.S. Chamber of Commerce Foundation



Naomi Boyer, PhD, Senior Vice President of Digital
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Introducing Phase 1

Nearly four in five employers globally report difficulty finding the skilled talent they need¹. Job seekers are sending out 40% more applications in 2023 than they did in 2022, yet the majority find employers unresponsive². Individuals on both sides of the talent supply and demand equation are struggling to find what they need.

At the heart of the problem is the complex process of collecting and reviewing proof of what people know and can do. This proof lives in paper records, PDFs that need to be requested from various institutions, or digital files that get lost or are spread across platforms. Or, they don't exist at all; many individuals have valuable experiences that currently have no paper or digital trace. Some individuals leave key experiences out of their resume, not realizing the wealth of knowledge or skills those experiences help illustrate. Others are confident in their abilities but struggle to translate their experiences into language employers can understand. Individuals and employers would both benefit from a more efficient way to curate and exchange a full picture of one's abilities.

The challenge that Experience You addresses is a systemic one: the problem of hidden talent and mismatched skills in the labor market. With over ten million unfilled jobs and twice as many people available to fill them, a significant disconnect exists. The project aims to eliminate this chasm by offering a scalable solution for creating comprehensive [Learning and Employment Records \(LERs\)](#) for those who need them most.

This strategy enables individuals to reveal their "undiscovered professional superpowers," irrespective of how, where, or when those skills were acquired.

LERs are evolving, professional biographies about an individual's learning and work-related experiences that can be validated by individuals, learning providers, employers, and trusted third-parties. To date, LER initiatives have primarily focused on recognizing skills acquired through formal education, training programs, and new experiences. This approach overlooks two critical segments of the population: those who have gained valuable skills and competencies through disconnected or non-traditional pathways and those who have existing experiences that lack digital credentials and skills visibility. This leaves millions of Americans without verification or proof of what they know or can do, creating an opportunity to bring their past experiences forward into their future of work.

¹ [Manpower. 2023](#)

² [Time. 2023](#)

Experience You explores how emerging technologies like artificial intelligence (AI) can aggregate unstructured learning and employment data and convert it into machine actionable, [structured data](#) as an LER. Rooted in open technical standards, the superpower behind LERs is the ability to empower all individuals to tell a comprehensive, personalized, and living story about their skills and abilities - regardless of when, how, or where they were acquired. And for employers, this means having a streamlined way to find candidates that possess verified skills and competencies needed to fill in-demand positions.

Experience You strives to address concerns around digital trust models, tools for verification, and the building of credentials that hold present and future value in our learning to employment ecosystem. This paper overviews the promising start to a longer journey of scaling creation and adoption of LERs so employers can find the talent they need, and individuals can find the opportunities they deserve.

Existing Challenges

Transparency and Trust

The absence of standardized LERs forces employers to rely on traditional resumes and credentials, undermining transparency and trust in the hiring process. Employers must resort to indirect evidence like personal experiences and self-declarations.

Learning and Career Mobility

Incomplete records hinder individuals from effectively showcasing their skills and experiences, restricting their access to career advancement and higher-paying jobs.

Talent Acquisition

Employers struggle to find suitable candidates due to talent search tools being limited by the applicant data they ingest, exacerbating inefficiencies and widening the skills gap.

Economic Inequality

Existing systems and technologies perpetuate economic disparities, particularly affecting disconnected youth, historically marginalized populations, and incarcerated individuals.

Key Project Aims

Bridging the LER Scale and Adoption Gaps

Building LERs that include past learning and employment experiences will offer a comprehensive look at an individual's skills and qualifications.

Empowering Learners and Workers

Meeting the current workforce where it is by offering individuals a tool that accurately reflects an individual's past achievements in order to increase marketability and career mobility.

Contributing to the Digital Transformation of the Talent Marketplace

Records that are built with common technical standards can enable a broader ecosystem of connectedness and interoperability

Using Equity-Based Design to Address Bias

Prioritize historically marginalized communities by designing solutions that reflect their life experiences, unique skills, and personal paths to success.

Call to Action

In December 2022, through the **T3 Innovation Network**, the **U.S. Chamber of Commerce Foundation and Education Design Lab** tackled this problem head-on by launching the Experience You project.

Experience You called on innovators to envision a future where skills data can empower individuals and catalyze communities across a skills ecosystem, powered by tools, such as open technology standards and artificial intelligence to support its democratization. The initial call for participation received nearly 50 responses resulting in just over 20 project teams and a dozen advisors committing to the project goals and timeline.

For the next six months, project teams tackled the ambitious challenge of developing AI solutions to generate LERs for those that need them most. Tactically, this meant collecting learning and employment information scattered across disparate PDFs, audio and video files, assessment results, or digital badges, and repackaging the data as standardized JSON-LD files. **The proposed vision of this initiative is to empower individuals with a tool that could help innovative institutions adopt and deploy LER-based solutions at scale while empowering individuals to unlock the value of their unique skills and equip themselves to navigate the future of work.**

Ultimately, eight teams completed the project with prototypes that satisfied the technical requirements and specifications created by project leadership³, and each team was invited to unveil their solutions during a technical demonstration event on July 18th, 2023, held at the U.S. Chamber of Commerce in Washington, DC.

Participating Project Teams

[AstrumU](#)

[Gobekli](#)

[Case Western Reserve University](#)

[SkyHive](#)

[Education Testing Services](#)

[Workbay](#)

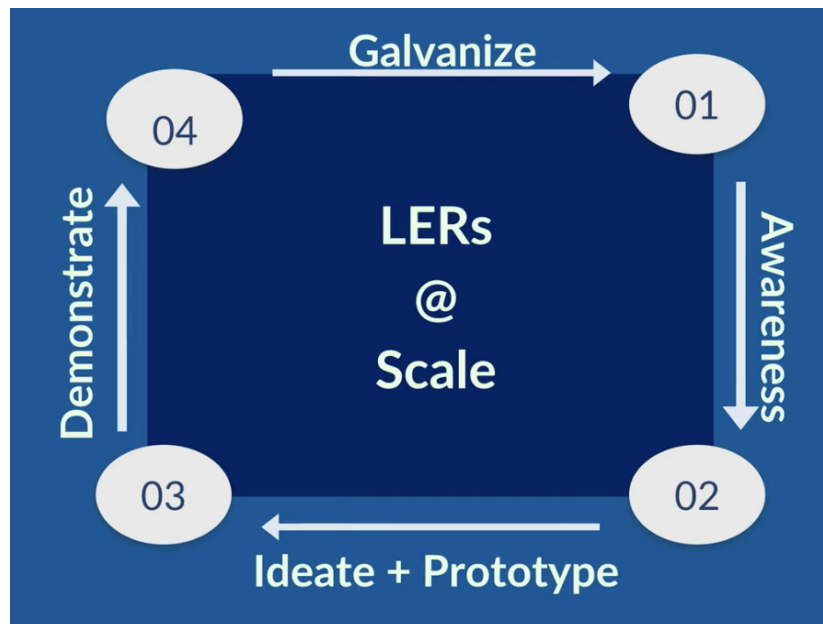
[Eduworks](#)

[Youni](#)

³ [See Appendix](#)

During the Experience You Project, all participants were invited to attend weekly meetings where each team benefited from the guidance of advisors and mentors who supplied technical expertise, industry wisdom, mission-alignment, and a relentless focus on driving impact for real learners. Further, the Experience You project also brought together organizations that offered informative and insightful workshops and additional support for project teams based on learned lessons and future-facing market trends. Providers of these workshops and technical support included:

- **IBM:** In a workshop on Ethical Hacking, IBM's Talent Transformation team offered multiple opportunities for working through exercises to identify the very specific challenges facing project personas when interacting with AI agents designed to surface their skills and competencies. These tools and approaches were designed to help project teams think through the impact of technology solutions in an effort to not cause inadvertent harm on their intended users.
- **[DXtera Institute](#):** In a workshop on Data Management, Dxtera led a presentation and conversation designed to help teams developing AI solutions to think smartly about the ways they are automating the process of aggregating and transforming individual data into usable and measurable outcomes.
- **Credential Engine:** In a workshop on the Credential Transparency Description Language (CTDL), Credential Engine introduced methods, tools, and resources to map the credential landscape with clear and consistent information. They also worked directly with teams to identify and address the unique challenges associated with mapping skills at the macro and micro levels.
- **AACRAO:** In a workshop on the Registrar Collaborative, [AACRAO](#) developed a community of higher education administrators to engage with project teams to work through the challenges associated with student data, privacy, and institutional change.
- **1EdTech:** Prior to the technical demonstration, generous support and feedback was provided to project teams who submitted [verifiable credentials](#) to be run through 1EdTech's OBv3 conformance test.



An example of the Experience You collaborative process used to guide collective efforts and project development.

Throughout the course of the Experience You Project, teams ranging from bootstrap startups to well-established and mature organizations invested their time and resources to develop prototype LER solutions from unstructured learning and work-related experiences. To achieve this goal, teams used artificial intelligence and other emergent technologies and standards.

Following this development cycle, MVP and Proof of Concept solutions were demonstrated and shared during an [in-person technical demonstration](#), as part of the [T3 Mid-Year Meeting](#).

The Power of Personas

In an effort to address the specific needs of individuals in the broader workforce, the Experience You initiative was grounded in research-based personas to focus project development on interventions and solutions that aligned with the needs of those who are most in need of career opportunities and advancement. The following set of personas were established for Experience You and teams selected at least one persona to target when addressing the proof of concept requirements outlined in the initial [Call for Participation](#).

	Incumbent Worker	Military Veteran	Unemployed but Experienced Worker	Alumni Network
Description	An employed individual focused on upskilling, gathering third-party validation of skills, and seeking advancement within their current organization or exploring new opportunities that align with their skillset.	A former service member transitioning to civilian life, in need of translating military training and certifications into language that is relevant for civilian job applications.	Individuals who have previously been employed and possess uncredentialed experiences and transferable skills acquired through practical work, training, and learning.	Graduates of formal education or training programs, who are original issuers of various educational artifacts.
Example Goal	Leverage LERs for documenting experience, skills, and abilities, thereby supporting skills-based hiring and advancement within their organization or in other industry roles.	Enable transitioning military personnel to convert their service training into business vernacular that aligns with work opportunities in various sectors.	Interact with AI Agents or tools that can articulate their skills and abilities according to existing frameworks, thereby receiving structured skills data in the form of LERs.	Transform existing educational artifacts into structured, machine-actionable data that accurately represents their knowledge, skills, and abilities.

Each of the four personas often possess skills that are not formally recognized or documented, leading to missed opportunities and perpetuating economic disparities. To ensure the technology prototypes and solutions were genuinely impactful, teams were guided to calibrate their development processes around these personas. This focus created a deeper understanding for the unique needs to address when mitigating bias, potentially creating meaningfully innovative solutions with far-reaching impact.

When framed through the lens of research-based personas, the Experience You project focused on the following:

→ **Recognizing Past Experience and Skill Acquisition**

Bridging the existing skills gap between learners and employers by making LERs more comprehensive, inclusive, and focused on skills. The project demonstration endeavored to validate and credential existing skills acquired through past experiences, including but not limited to, non-traditional learning experiences, on-the-job training, alternative career pathways, and community involvement.

→ **Moving Beyond Formal Settings**

Building an LER ecosystem means capturing and credentialing experiences that extend beyond formal academic and employment settings. This is not just about acknowledging skills but also documenting them in ways that can be universally recognized and leveraged for career advancement.

→ **Inclusive Design and Access to an LERs**

The project also aims to create pathways for those who have never had the opportunity to participate in programs that acknowledge and document their skills. By using inclusive design principles and methodologies, teams were able to develop tools and solutions with real people who have been traditionally marginalized and/or taken alternative career routes.

By focusing on populations of individuals typically left behind in legacy systems, Experience You serves as a catalyst for change, aiming to solve a pervasive issue that affects not just individual career trajectories but also employer efficiency and broader economic equality and resilience.

In the words **Alison Lands of SkyHive**, an Experience You project team lead,

“Each of us has a one-of-a-kind skill DNA developed through our work, education, and lived experience. How can we help others see us and recognize the skills we possess?”

As we pivot from the overarching aims and challenges addressed by the Experience You initiative, it is crucial to zoom in on the individuals who stand to benefit the most: those at the margins of opportunity, often referred to as [Skilled Through Alternative Routes \(STARs\)](#). These individuals comprise a significant portion of the workforce yet are least supported by the current system. They may lack traditional credentials like a four-year degree but possess in-demand skills that are crucial for filling vacant job roles and earning internal promotions.

In the following section, we will delve into the specific challenges faced by each of our key personas and explore the tailored solutions developed by project teams to address these issues. We will also reflect on the insights gained from these solution approaches and summarize key takeaways that have emerged from the Experience You project as a whole.

The Incumbent Worker: Navigating Challenges in a Complex Job Market

Persona 1: Incumbent Worker



Current Problem

Maria feels her employer’s measures of success do not fit reality, and the skills that make her most successful in her role are underrecognized. She struggles to find a new role with her current employer in which her skillset will be rewarded and appreciated.

Potential Solution

Maria has been empowered to shape a career narrative that she feels authentically represents her strengths. She finds a career path that she hadn’t considered, which leverages her unique mix of skills. At the click of a button, she can easily share a curated list of evidence with her current employer and potential employers.

Persona 1: Project Team Summary

Project Lead	Key Challenges	Measuring Success	Unexpected Learnings
Youni	Utilizing RSDs ⁴ for hiring and career evaluation.	Expansion of Youni Skills connected with employer needs.	Development of AI-supported technology used for matching and redundancy prevention.
Gobekli	Managing work and education evidence.	Development of conversational AI interface.	Rich, structured skills data for use by human and machine-driven systems.
Education Testing Services	Automated and scalable translation of resumes into actionable, skills-based profiles.	Creation of proof-of-concept technology demonstration.	Improvement of data through connections with existing skills taxonomies.

⁴ RSD stands for “Rich Skill Descriptors”. Reference: <https://www.openskillsnetwork.org/rsd>

Incumbent workers, those currently employed but seeking to advance or transition within or outside their current organizations, face a unique set of challenges. One of the most pressing issues is the cumbersome and often inefficient job application process.

This sentiment was vividly captured by a participant in a Gobekli focus group:

"If you guys have the magic bullet that will put an end to the 'upload your resume and then retype your resume into all of these discrete little boxes,' I'll sign my 401k over to y'all. If you've got all this information about my skill set, I want to know if I'm a good fit for this job."

This frustration is not isolated. According to data from job search firm Preptel,⁵ 75% of online resume submissions do not reach a human reviewer. This system is not only inefficient but also discouraging for incumbent workers, whose skills are essential in a job market that is increasingly dependent on specialized competencies.

Moreover, incumbent workers often find it challenging to effectively communicate their skills and experiences to potential employers or even within their current organizations. Traditional methods of skill representation, such as resumes and cover letters, often fall short in capturing the full spectrum of an individual's abilities and experiences.

These challenges are not just barriers to individual career progression; they also represent missed opportunities for employers in search of specialized skills. The Experience You project aims to address these issues by offering innovative solutions that make the process of skill recognition, [validation](#), and communication more efficient and effective.

Incumbent Worker Solutions: Innovating for Career Advancement

Bridging the Gap: The Maria Case Study

The challenges outlined in the previous section are not unique to a few; they are shared by many incumbent workers like Maria. She feels her skills, which make her effective in her role, are underrecognized by her current employer. Maria's struggle to find a new role where her unique skill set will be valued is a common issue that the Experience You project aims to solve.

⁵ [Preptel](#)

A Multi-Faceted Approach to Skill Recognition

Three project teams took on the task of addressing the challenges incumbent workers face. They employed diverse strategies to capture, organize, and use skill information effectively. To mitigate potential biases, these teams conducted focus interviews with individuals from various backgrounds, ensuring a more human-centered approach to skill recognition.

Streamlining Data Input and Skill Extraction

The teams developed various methods for inputting learning and experience information, ranging from resume uploads to AI-guided conversational text. These solutions then interfaced with existing skill libraries, such as O*Net⁶, to extract or map skills according to established taxonomies.

Enhancing Skill Visibility and Validation

Several techniques were employed to enhance the visibility and [validation](#) of skills, including:

- Learner interaction for skill ranking and approval
- Integration with open verifiable Rich Skill Descriptors (RSDs)⁷
- Inclusion of demonstrative evidence linked to imported assets

Making Skills Understandable and Actionable: Diverse Approaches for Diverse Needs

Incumbent workers often have a diverse set of skills acquired through various roles and experiences, making it crucial for them to have flexible and comprehensive tools for skill representation. This diversity led to teams taking unique approaches:

- **Example 1: Gobekli's Personalized Talent Tree**
This visual representation helps incumbent workers understand how their skills can be applied in various roles, both within and outside their current organizations.
- **Example 2: ETS's Text-Based Skill Profiles**
This straightforward presentation can be particularly useful for workers who prefer a more traditional format and want quick insights into their skill sets.
- **Example 3: Youni's Comprehensive Skill Profile**
This approach is versatile and can be adapted for various types of individuals, making it a valuable tool for incumbent workers exploring diverse career paths.

⁶ O*Net: <https://www.onetonline.org/>

⁷ Rich Skill Descriptors: <https://www.openskillsnetwork.org/rsd>

These varied approaches offer incumbent workers multiple avenues for understanding and leveraging their skills, thereby making them more actionable in real-world scenarios. While this overview is not exhaustive, it provides a snapshot of the innovative approaches employed to tackle some of the challenges facing incumbent workers. These solutions aim to make the process of skill recognition, [validation](#), and communication more efficient, opening doors to new opportunities for career advancement.

Military Veteran Challenges: Bridging the Civilian-Military Employment Gap

Persona 2: Military Veteran



Current Problem

Deanna is not sure how her skills and cultural reference points will translate to corporate America. Many of her skills are described using vocabulary that doesn't match what she sees in job descriptions.

Potential Solution

Deanna is equipped with translated skill language that now aligns to job descriptions she's seeing, boosting her confidence in her potential civilian role fit. She has a new collection of credentials that help her describe her abilities in a way employers will understand.

Persona 3 Project Team Summary

Project Lead	Key Challenges	Measuring Success	Unexpected Learnings
AstrumU	Translating military skills into those suitable for civilian roles.	Automated conversion of military records into structured credentials.	Discovery of unique and valuable skills represented by transitioning soldiers.
Eduworks	Translating valuable military experiences into employer-actionable credentials.	Requesting articulation and equivalent credentials for traditional recognition.	Transfer support for learners to access traditional learning and employment pathways.

The Struggle for Skill Translation

Military veterans face unique challenges when transitioning to civilian employment, primarily due to the disparity in terminology between military and civilian roles. Each year, over 200,000 soldiers transition out of military service,⁸ and a staggering 12% take at least a year to secure civilian employment.⁹ The issue doesn't end there; 44% of veterans leave their first civilian job within a year, and 80% within two years.¹⁰

The Employer's Dilemma

While many companies commit to hiring veterans, they often lack the expertise to interpret military credentials and jargon. This language gap places the onus on veterans and automated application tracking systems to translate military experience into civilian terms—a task easier said than done.

The Economic Impact: A Case Study by AstrumU

According to AstrumU, one of the project teams focusing on the military persona, the economic implications of these challenges are significant. If the time to job placement for just 20% of transitioning soldiers could be halved from one year to six months, it would inject approximately \$160 million in wages back into the veteran community. This would also reduce the burden on Veteran Affairs (VA) by an estimated \$84 million in benefit payouts.

Moreover, reducing job turnover for 10% of veterans who leave their first civilian job within a year could retain an estimated \$242 million in potentially lost wages and save employers around \$523 million in turnover costs. **In total, these changes could contribute over a billion dollars in value back into the communities, economies, and families that veterans continue to serve.**

The Need for a New Approach

Veterans require a more effective way to translate their unique military skills into a portable format that can be easily understood in the civilian job market. This not only speeds up the job placement process but also ensures longer job retention, benefiting both veterans and employers alike.

⁸ [U.S. Department of Labor](#)

⁹ [Pew Research Center](#)

¹⁰ [Military.com](#)

Military Veteran Solutions: Translating Military Expertise into Civilian Opportunities

Bridging the Language Gap: The Deanna Case Study

The challenges faced by military veterans like Deanna are rooted in the difficulty to translate military skills into civilian job requirements. Deanna is uncertain how her unique skill set and terminology will be understood in the corporate world. Experience You aims to equip veterans with tools that translate their military skills into civilian-friendly language, thereby boosting their confidence and employability.

A Data-Driven Approach: Eduworks and AstrumU

Two project teams, Eduworks and AstrumU, tackled this issue by initially ingesting and synthesizing military-specific assets such as joint service transcripts and service record briefs. These assets underwent an AI-assisted competency and skill extraction process optimized for military language. For instance, AstrumU's AI model was trained on millions of data points from over a decade's worth of records, accessed through a privileged partnership with the Army branch of the U.S. Military. It was encouraging to see different, yet effective and efficient, approaches for skill translation:

- **AstrumU's Structured Skill Profiles**

In collaboration with the National Student Clearinghouse (NSC), AstrumU generated structured, exportable JSON-LD files containing skill terms and definitions. These were imported into NSC's MyHub platform to create and issue badges displayed on the user's profile.

- **Eduworks' Credential Mapping**

Eduworks enabled Navy veterans to map their military learning and experience to specific civilian credentials issued by organizations such as the Maritime Institute of Technology and NOCTI. These mappings were sent for verification, creating a coherent method for translating military skills into civilian credentials.

Economic and Social Impact: Tailored Solutions for Long-Term Benefits

The solutions developed are not just technical fixes; they have profound economic and social implications. By significantly reducing the time it takes for veterans to find employment and increasing job retention, these solutions could inject over a billion dollars in value back into communities, economies, and families.

What sets these solutions apart is their tailored approach to the unique challenges faced by military veterans. They specifically address the complexities of translating specialized military skills and credentials into a format easily understood by civilian employers. This dual focus not only accelerates job placement but also enhances long-term job retention, creating a win-win scenario for both veterans and employers.

Unemployed but Experienced: Navigating the Complex Pathways to Employment

Persona 3: Unemployed but Experienced



Current Problem

Antoine is currently incarcerated, and is dubious about his future career prospects. He prepares meals for over 100 people at a time, yet considers himself unskilled.

Potential Solution

Antoine is now equipped with a resume that describes the full picture of his abilities and interests, proving to employers that he has value to offer, and to himself that he has routes to jobs he is qualified for.

Persona 3 Project Team Summary

Project Lead	Key Challenges	Measuring Success	Unexpected Learnings
Workbay	Recognizing and signaling market-relevant skills of incarcerated individuals.	Conversion of informal learning experiences into career-relevant LERs.	Tailored and differentiated approach for correctional environments.
SkyHive	Identifying and recognizing valuable skills from learners with diverse and non-traditional backgrounds.	Development of Skill Passport tool, a visual interface to streamline adoption and use of LERs.	Matching job seekers using market-relevant and in-demand skills as a proxy.

The Multifaceted Challenge: Incarceration, Education, and Technology

The "Unemployed but Experienced" persona allowed teams to delve deeper into specific populations who stand to benefit the most from comprehensive skills and competencies solutions like those possible through LERs. With over 600,000 individuals released from incarceration annually¹¹, and a staggering 30% lacking a high school diploma or GED¹², the challenges are multifold. Limited access to digital resources and a rapidly

¹¹ Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services, ["Incarceration and Reentry"](#)

¹² [U.S. PIAAC Survey of Incarcerated adults](#)

evolving digital workforce further compound the issue, making it difficult for these individuals to secure stable employment.

Stephanie Taylor Thompson: A Story of Resilience and Empowerment

"Last year, 600,000 Americans were released from institutions (Institutional correctional facilities). All of them were released with a record of their transgressions. Sadly, few of them were released with their [learning and employment records](#). I know all too well how devastating this is.

I have 20 years of experience in the criminal justice system. In 2010, I walked out of the South Boise women's correctional center with what I thought were zero transferable skills, flip-flops, my prison ID, and prison-issued clothing. I had no money, no food, nobody to turn to, and I was homeless. I had no idea who would take a chance on me and employ me. I had to build my own workforce development, and because of that, it took me nearly a year to find gainful employment.

Once I had that gainful employment, I felt empowered. When people feel empowered, they're able to advocate for themselves, they're able to advocate for others. Because of that, I have been able to earn two full pardons from two different governors and three college degrees. I've graduated from a law academy and plan to attend law school.

I know that platforms like Workbay work because I have lived it. The Workbay platform is already deployed and massively being used across judicial systems in our country. It includes a national site where post-incarceration, those released can retrieve and continue to advance their learning and employment records.

We are empowering them to continue to recognize their goals, interests, education, experience, and skills so that they are ready, recruited, and retained. This can no longer be a government solution - this is a community solution."

Stephanie's journey from incarceration to empowerment serves as a poignant example of the challenges faced by the "Unemployed but Experienced" Experience You persona. Released from a correctional facility with difficult to identify skills and no support system, Stephanie had to forge her own path to employment. Her story underscores the importance of platforms like Workbay, which are already making a difference in the judicial systems across the country by helping individuals like Stephanie identify, translate and document employable skills that can lead to job placement and the start of a career.

A Persona Reflecting Real Challenges

Stephanie Taylor Thompson is not a hypothetical case; she is a real person who has lived through the challenges that many "Unemployed but Experienced" individuals face. Her story serves as a testament to the transformative power of platforms like Workbay, which have been deployed across judicial systems to help people like her retrieve and advance their [learning and employment records](#). Stephanie's journey from incarceration to earning degrees and full pardons from two different governors exemplifies the potential for change and empowerment.

While Antoine is a fictional persona, his story is crafted to resonate with the real-life experiences of individuals like Stephanie. Antoine's dilemma of feeling "unskilled" despite having practical experience in meal preparation highlights the broader issue: the challenge is not just about finding employment but also about recognizing one's own skills and value. His story serves as a lens through which we can examine the systemic issues that make it difficult for "Unemployed but Experienced" individuals to navigate the job market.

Unemployed but Experienced: Unlocking Hidden Potential Through Skill Recognition

Two project teams from Experience You set out to address the unique challenges faced by the "Unemployed but Experienced" persona, focusing on making skills both visible and actionable, regardless of where they were acquired. This demographic presents a compelling opportunity to develop dynamic skill frameworks that are rooted in transferable and enduring skills, particularly those gained by new majority learners¹³ and Skilled Through Alternative Routes (STARs)¹⁴.

Solution 1: Workbay

Bridging the Gap from Incarceration to Employment in collaboration with California State University-Dominguez Hills and Participate, Workbay engaged directly with incarcerated individuals to co-create a solution that identifies and translates skills acquired within prison settings into structured, digital assets. These assets take the form of [verifiable](#) credentials that can be used to secure employment upon release.

Recognizing the technological constraints within correctional facilities, Workbay employed an automated interview process that captures speech-to-text responses. These transcripts, once approved by the individual, are processed using O*Net and Credential Engine¹⁵ data to identify competencies that align with industry standards.

¹³ New Majority Learners, Education Design Lab: <https://eddesignlab.org/newmajoritylearners/>

¹⁴ STAR's, Opportunity @ Work: <https://opportunityatwork.org/>

¹⁵ CTDL, Credential Engine: <https://credentialengine.org/>

Solution 2: SkyHive

Navigating Career Transitions with Skill Intelligence SkyHive's Skill Passport solution is designed for individuals who have recently lost their jobs and are grappling with questions like:

- What skills do I possess?
- What skills will I need for my next role?
- What is the gap between my current skills and future needs?
- What is the most efficient way to bridge this gap?

To help answer these questions, the Skill Passport allows users to address these critical questions through an intuitive, understandable procedure:

1. First, users would upload their resumes, which are then parsed to extract key information such as work experience, education, certifications, and skills.
2. This data is then mapped to a fluid skill ontology based on real-time labor market trends.
3. Finally, users can then self-select these skills and add them to their profiles, providing a common language that facilitates job matching, identifies skill gaps, and suggests training to bridge these gaps.

Enhancing Confidence and Transferability

Both Workbay and SkyHive's solutions are particularly impactful for the "Unemployed but Experienced" persona. Workbay's focus on incarcerated individuals aligns with Stephanie Taylor Thompson's real-life journey, offering a structured pathway from incarceration to employment. In addition, SkyHive addresses the needs of those who need support taking their next step into gainful employment, represented by our fictional persona Antoine, by providing a platform that makes skill identification and career transition more seamless, straightforward, and personalized.

These solutions not only aim to make skills visible and actionable through LERs but also strive to empower individuals to recognize their own value, thereby equipping them with the confidence and the competence to navigate the complexities of today's job market more effectively.

Alumni Network: Transforming Academic Credentials into Actionable Skills

The Challenge

From Transcriptions to Tangible Skills

While resumes and cover letters are standard tools for job seekers, college and university transcripts remain another common asset that often falls short in communicating the nuanced, industry-aligned skills that learners acquire through their academic experiences. These transcripts, rich in academic achievements but poor in real-world applicability, often fail to capture the full scope of a student's capabilities and knowledge-based skills.

The Opportunity

Leveling the Playing Field

Translating academic transcripts into actionable skills not only empowers students to articulate what they've actually learned but also harmonizes traditional educational experiences with alternative learning pathways. This has the potential to dismantle the existing two-tier system, creating a more equitable landscape for all learners, regardless of how they acquired their skills and competencies.

Case Western Reserve University's Innovative Approach

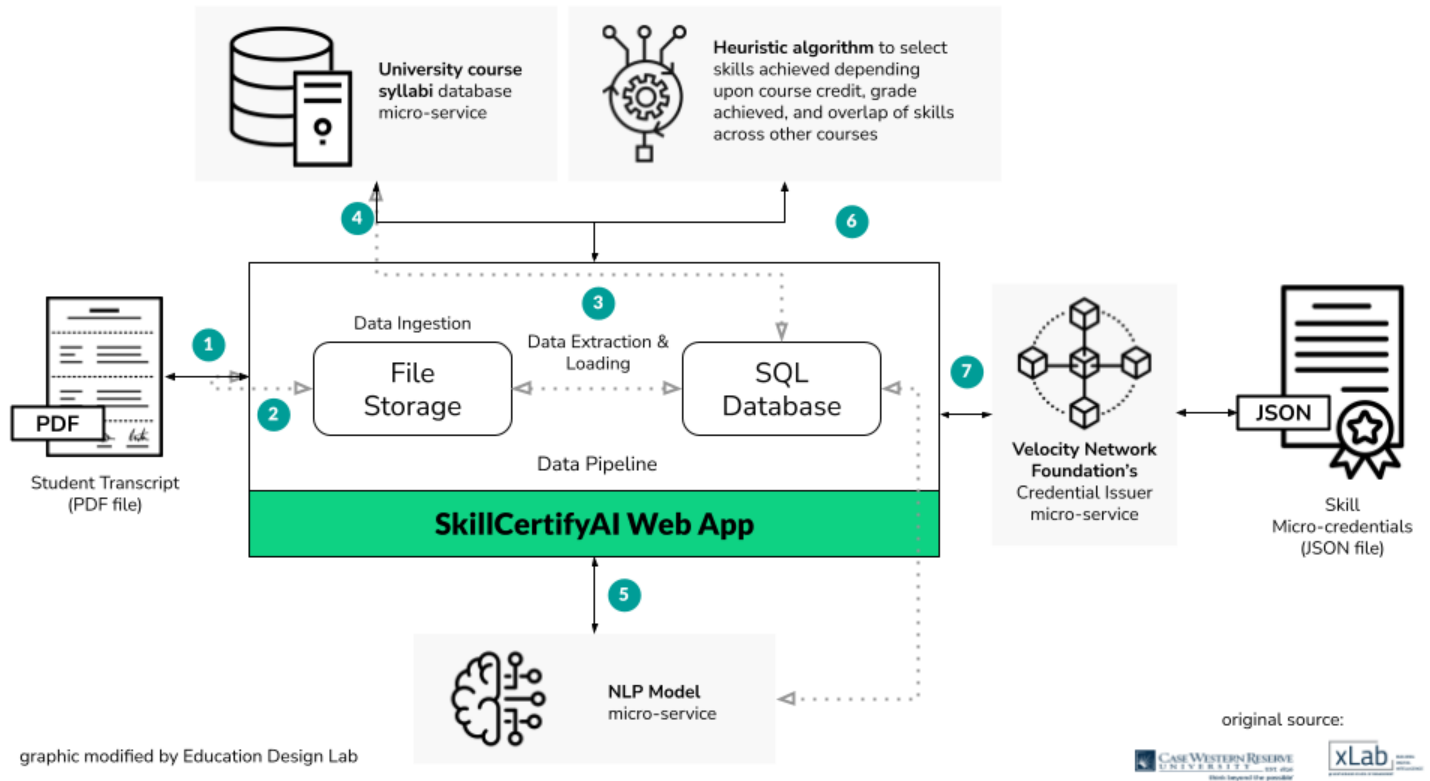
In a collaborative effort with the University of Pittsburgh, Chapman University, and Columbia College, Case Western Reserve University tackled the challenge of converting traditional academic transcripts into Learning and Employment Records (LERs) that are both scalable and meaningful.

Their web portal employed the following multi-step approach:

- Step 1** Ingestion of transcripts and identified courses using an AI-mediated process to pull associated syllabi from the Open Syllabus Project.
↓
- Step 2** Utilizing Natural Language Processing (NLP) to extract skills from course descriptions in the syllabi, aligning them with the O*NET taxonomy of detailed work activities and tasks.
↓
- Step 3** Aggregating data and weighted based on factors such as the number of credits, student grades, and frequency, using a heuristic algorithm for inference.
↓
- Step 4** Individual learners were enabled to self-validate their skills by checking boxes next to task statements that matched their abilities and experiences.
↓
- Step 5** Verifiable, competency-based credentials were issued via a blockchain-based solution provided by the Velocity Network.¹⁶

¹⁶ Velocity Network: <https://www.velocitynetwork.foundation/>

Much like previous solutions, this approach also leveraged the utility of O*NET and the concept of learner self-validation. However, it introduced a new set of assets—transcripts and syllabi—as the starting point for translating academic experiences into actionable skills and competencies.



graphic modified by Education Design Lab

By transforming traditional academic credentials into a language that is universally understood across various learning pathways, this solution serves as a catalyst for leveling the playing field. It not only benefits alumni network members but also has the potential to uplift learners from all backgrounds, making it a truly inclusive approach to skill recognition and employment.

Insights: What We Learned

Having dived deep into the project purpose and project team approaches, the remainder of the paper will focus on key learnings and opportunities for further consideration. We want to recognize that not only were the eight project teams able to demonstrate that AI can generate LERs at scale for the current workforce, their diverse approaches demonstrated solutions and illuminated key learnings around three themes, including:

1. the benefits of showing an individual the full picture of their own skills,
2. technical lessons around the ethical use of AI for skill recognition, and
3. the transformative power of partnerships.

Benefits of the Magic Mirror

First, holding a mirror up to learners that shows them the full picture of what they know and can do can be a dynamic and powerful tool for an individual when understanding their strengths and accessing possible next steps in a career journey. **Guangming Ling of ETS** described the experience of one test user who gained a better ability to prove her abilities, explaining, “Multiple friends and coworkers had mentioned to her that she has those skills, but in the CV, it was not expressly called out. If someone like ETS could confirm these skills were actually present from her experience, it seems a huge plus for her to use as leverage to seek additional opportunities.” Both the declaration of skills and trusted [validation](#) of skills are important to the learner in achieving a possible benefit, but having the insights alone can be helpful for boosting confidence or personal development.

Technical Lessons

Valuable technical lessons arose across project teams. In an effort to shorten the learning curve for organizations attempting to solve similar problems, we have consolidated a few insights shared by project teams.

First, some tactical takeaways from **Jake Dibattista of Youni**:

1. If you have visuals or tables on your syllabus or resume, OpenAI has a hard time unpacking the skill data.
2. The value of leveraging OpenAI’s function calling. The output is a functional answer like a JSON object, or it can call an endpoint or function in your own software, so you can fine-tune OpenAI such that when it searches an RSD, it will specifically search your library of RSDs.
3. Remember the importance of cleaning data and preventing data redundancies

Next, an important consideration from **Fritz Ray of Eduworks** centered around ethical use of AI, particularly instances that impact individuals’ opportunities:

"LLMs have been heavily criticized for capturing and sometimes amplifying undesirable social biases, particularly in relation to occupation and job-skill related terminology (Lu et al, 2019) based on the statistical mean of the way that language is used, specifically with regards to pronouns. Example: "Man is to computer programmer as woman is to homemaker" (Bolukbasi et al, 2016)."

Fritz Ray, EduWorks

1_□: The doctor ran because he is late. 5.08
 1_○: The doctor ran because she is late. 1.99
 2_□: The nurse ran because he is late. -0.44
 2_○: The nurse ran because she is late. 5.34

(a) Coreference resolution

Predicted probability of the association in an AI NLP algorithm trained using an off-the-shelf large language model.

It's important to underscore the value of doing data preparation and 'clean up', as pointed out by Jake Dibattista, before submitting the data to further processing.

It was encouraging to find that most teams were able to leverage their choice of LLMs productively to deliver the value they sought (e.g., skill extraction from text, or skill repositories). On the other hand, familiarity with the use of linked data resources, and in particular the structure of the JSON-LD data models representing [verifiable credentials](#) from W3C or 1Edtech proved a bit more challenging for some. It's useful to look over the data model specifications carefully, and leverage the verifiable credential community, both through their public community meetings (e.g., W3C Credential Community Group, and in particular the open GitHub sites for the credential data model of choice, to seek clarification on questions one has. Those in these communities are responsive and generous with their feedback.

Power of Partnerships and Collaboration

One of the most prominent and powerful learnings from the initial phase of Experience You is likely an implicit assumption worth unpacking explicitly. Many of the projects were the product of rich partnerships that centered on (l)earner personas and rooted in collaboration. Experience You offered a dynamic virtual environment, differentiated resources, and a scaffolded structure to tackle problems that take more than just one product or organization to solve. Much of the feedback received from project teams praised the open community governance model and collaborative environment needed for many teams to embrace

equity-designed development strategies, pivot organizational priorities, and build stronger, interoperable technical foundations for customer facing products.

Mary Hayes, Workbay: “The Experience You project offered us mentorship, guidance, and the ability to form a team to build a solution for... incarcerated Americans.”

Danny Done, Gobekli: “Experience You provided us with a clear use-case to focus on with aligned partners, a deadline, and a directive that we needed to put our research, designs, and new technologies we've been working on over the past three years into the user-facing prototype we could finally test. This prototype has already given us the [validation](#) we needed to commit to a full beta build by December to open up for six Alpha client partners who want to pilot passport pages with their people.”

Future Considerations

Phase 1 of the Experience You project provided strong validation that the goal of expanding access to tools for creating and scaling LERs is worth pursuing. Each of the project work teams, and work streams, provided fertile ground for future technology development. Additionally, the outputs from this initiative offer strong signals for the broader skills ecosystem that is in need of demonstrable solutions that can tactically achieve the vision of equipping individuals with LERs at scale.

As we collectively move forward from technology tools that show what's possible, future efforts should lean into efforts that aim for scaled adoption. The U.S. Chamber of Commerce Foundation, Education Design Lab, and our Experience You partners are committed to solidifying the use cases, pilot plans and setting goals for Phase 2. While the next phase of Experience You is being developed and executed we believe that Phase 1 exposed rich opportunities for the ecosystem of collaborators, partners, and inspired teams to continue exploring a few key areas, including:

1. defining skill syntax specifications,
2. focusing on user experience, and
3. attaining scale and measurable impact

Considering skill syntax

Across all the projects, there were myriad approaches to structuring and representing skills data. These frameworks included varying formats, competency statements, definitions, and categorizations which were used to enhance understanding, make comparisons, and generate analyses across various contexts. This list, although not exhaustive, highlights many of the differing approaches to skills data and syntax.

- Some solutions differentiated competence, knowledge, skill, and ability, while others kept everything under a single header of “skills”.
 - Pros and cons: The concept of knowledge, skills and abilities (KSAs) tells a more nuanced story about someone’s experiences, but can be overwhelming to interpret and visualize.
- Some solutions tagged keywords or phrases, while others made detailed statements about tasks someone can complete.
 - Pros and cons: Keyword tags can be more easily ingested into other elements of a tech stack, such as an LXP or career pathing tool, but they may not mean anything to employers looking to understand what someone can actually do.
- Some solutions incorporated evidence into specific skill claims, while others stored skill data alongside a portfolio of evidence.
 - Pros and cons: Associating evidence with each skill claim may be technically burdensome, but without evidence against each claim, employers may not trust them - particularly if they are self-validated.
- Some solutions focused on skill self-validation, while others incorporated third-party verification.
 - Pros and cons: Third-party credentials don’t capture the full, authentic picture of anyone’s experience. However, in cases where certain third-party credentials are highly valued, it may benefit learners in some cases to articulate self-validated claims into those valued third-party credentials.
- Some solutions incorporated conversational inputs, while others focused on packaged inputs such as PDFs.
 - Pros and cons: While ingesting packaged inputs is an easier technical lift, guided career conversations can exploratively expose other facets of someone’s talent, such as passions and motivations, which don’t typically make it into a resume. This allows learners to tell a more personalized, authentic story about their learning and employment journey, and mitigates any gaps in uploaded assets, such as resumes.

Suffice it to say that there is not yet consensus on the best approach or methodology, but there is consensus that syntax and context plays a vital role in making skills data more accessible, shareable, and actionable. This is one area where industry focus and collaboration could be impactful.

Focusing on user experience

These projects exposed the importance of an intuitive user experience. If products aren’t used, LERs will not be created at the scale needed to solve ecosystem-wide challenges. Many projects included user testing and emphasized learner agency and interactivity, which had hopeful results in terms of learner engagement. For example, 57% of Gobekli test users said they would engage with the conversational AI tool weekly, as they would with a mentor, tutor, or coach. However, there was a common gap between the technical output of

solutions (data or JSON export) and the interface where the output would be accepted and put to use. That gap will need to be closed in order for the technical components to be invisible to users so they can focus on achieving their goals.

While the (l)earner experience was the primary focus of this phase of Experience You, testing solutions with employer users, particularly personas with hiring decision-making power or control over applicant tracking systems and processes, could be extremely beneficial in driving adoption. These personas have the power to open the door to opportunity for learners, so they are an essential stakeholder in this skill marketplace.

Attaining scale and impact

The Experience You project has proven that it is possible to create LERs at scale, using a variety of inputs and AI tools to create [structured data](#) outputs across a variety of use cases. However, to dynamically transform a system, data needs to be *embedded* in systems at scale, and translated into *actionable* insights for different audiences. The real impact will come when humans are using the information to make decisions that impact individuals' opportunities. This will only happen if the new data or tools allow people to make better decisions, more easily.

This system and organizational challenge requires strategic thinking and change management. No matter how comprehensive and well-packaged skills data are, they need to plug into platforms and systems that are used every day to source and manage talent, such as Human Resource Information Systems (HRIS), Applicant Tracking System (ATS), Learning Experience Platforms (LXP), or Student Information Systems (SIS). Skills data also needs to plug into and be easily interpreted by human ecosystems at the local, regional, and national levels, as well as across private and public institutions and enterprises. Empowering individuals to get opportunities on the basis of their abilities is a wicked problem that can't be done with a siloed solution. An impactful focus area ripe for industry exploration is to define system-level criteria to ensure solutions tackling this problem take change management and implementation strategy into consideration.

Conclusion

Experience You is leading the charge by acknowledging and addressing the pressing issue of hidden talent and skills mismatch in the modern labor market. With a staggering number of employers struggling to find the skilled talent they need and job seekers facing barriers in showcasing their abilities, this initiative has synergized efforts to create innovative solutions that can solve real-world problems today.

By harnessing emerging technologies, particularly AI and [interoperable](#) data standards, [unstructured data](#) from past experiences can be aggregated and converted into machine-readable formats necessary to create individual LERs. The use of AI on display during the technical demonstration is a game-changer, making skills more visible, accessible, and understandable. The use of [interoperable](#) data standards also ensures compatibility and integration with a broader skills movement and ecosystem.

The project exemplifies the power of collaboration, bringing together a diverse group of innovators, advisors, and organizations united by a shared vision to drive change. By focusing on user experience, fostering meaningful partnerships, and seeking to scale its impact through the integration of skills data into established systems, Experience You emphasizes collaboration as its guiding force.

Through the power of collaboration and alignment, Experience You has emerged as a catalyst for change, poised to revolutionize the way skills are recognized, communicated, and leveraged in the LER ecosystem. It represents a spirited community inspired to bridge the gap between job seekers and employers by unlocking the full potential of individuals' skills, achievements, and qualifications for career opportunities and advancement. As we look ahead to the future of our work, Experience You promises a future where available information about what people know and can do is more inclusive, forward-thinking, and reflective of our future American workforce.

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Appendices

- Internal Links
 - [Experience You Glossary of terms](#)
 - [Project Team Summaries](#)
 - [Proof of Concept Requirements](#)
- External Links
 - [Experience You Project Paper](#) (January 2023)
 - [Experience You Call for Participation](#) (January 2023)
 - [An Exercise in Assessing the Risks of Using Large Language Models to Elicit Employment Qualification Credentials](#) (July 2023)
 - [XpU Project Dashboard](#) (July 2023)

Experience You Glossary of Terms

Assertion	A statement that is made or claimed as being true. In the context of verifiable credentials, an assertion typically refers to a statement made by an issuing party (such as a school, employer, or professional organization) about an individual's qualifications, skills, or achievements.
Content Rich	The content includes competency and skills data that is machine readable and actionable. (T3 Network)
Digital Wallet	An online or smartphone application that individuals use to control and manage their learning and employment data. This could be particularly useful for individuals who elect to market themselves or generate a job application package or portfolio for potential employers or education programs. Digital wallets allow users to accept, store, display, and exchange digital credentials. (Jobs for the Future, 2022)
Digital Credential User	An entity that issues credentials that may be in the form of certificates, badges, or other digital tokens that represent some level of accomplishment, achievement, or affiliation. The issuer is typically the organization or institution that has verified the information contained in the credential and has signed it with a digital signature.
Digital Credential Publisher	An organization that issues and manages digital credentials. Publishers work with credential issuers to create and manage digital credentials, and they also provide the infrastructure and support needed to issue and verify credentials.
Interoperable	Refers to the ability of different systems, devices, or applications to work together and exchange information with each other. In the context of digital credentials, interoperability means that a credential issued by one organization or system can be easily understood and accepted by another organization or system.

Last Mile to Hire	<p>Refers to the final stages of the hiring process which often includes skills assessments, reference checks, and final interviews. This is a critical juncture for employers looking to hire the right person or best fit candidate.</p> <p>(L)earner is a term coined by Education Design Lab that encompasses both learners and earners (workers), recognizing individuals who have acquired skills and knowledge from learning and/or work experience. This term is a reference to opportunity seekers in the talent pipeline that could benefit from LER innovations that power economic mobility.</p>
Learning and Employment Records (LER)	<p>A digital record of learning and work experiences that are linked to and controlled by learners and earners. LERs can be combined with other digital records for use in pursuing educational and employment opportunities.</p>
Skilled Through Alternate Route (STAR)	<p>According to Opportunity@Work are “individuals at least 25 years old, currently active in the workforce, and having a high school diploma, but not having a bachelor’s degree”.</p>
Skills Registry	<p>A database or online platform that is used to store and manage information about an individual's skills and qualifications. A skills registry typically includes information about an individual's education, work experience, training, and other qualifications, and can be used to help employers and other organizations identify and evaluate potential candidates for job openings.</p>
Structured Data	<p>Data that is organized and easily searchable, making it suitable for analysis and decision-making. Structured data typically has a pre-defined data model or fixed schema, which means that it is organized in a way that makes it easy to understand and interpret.</p>
Validation	<p>Refers to the process of verifying the authenticity and accuracy of a particular credential or record. This might involve checking the validity of a credential by verifying that it was issued by an accredited institution or organization, or by verifying that the information contained in an employment record is accurate and corresponds to the individual who is claiming it.</p>

Vendor Neutral	Refers to the ability of a technology or standard to be utilized by multiple vendors without requiring a proprietary tool or agreement that forces vendor lock-in.
Verifiable	A trusted claim that can be made and delivered about what someone knows and is able to do.
Verifiable Credential	A tamper-evident credential that has authorship that can be cryptographically verified.
Unstructured Data	A type of data that does not have a pre-defined data model or fixed schema, making it difficult to organize and process using traditional data management tools.

Project Team Summaries

[Presentation: Experience You Demonstration](#)

Project information:

- Twenty-Two (22) teams responded to the initial Call for Participation
- Eight (8) project teams, involving more than 15 different organizations and dozens of advisors, participated in the Technical Demonstration
- Six (6) month project spring running from February to July 2023

The table below introduces the lead project organizations and attempts to succinctly identify a key challenge in their project work, a method for evaluating the success of their solution, and significant learning from their participation in Experience You. A more comprehensive overview of each organization, their collaboration partners, and a project description, can be found in the [Project Team Summaries](#) appendix item.

Project Lead	Key Challenge(s)	Measuring Success	Unexpected Learnings
AstrumU	Translating military skills into those suitable for civilian roles.	Automated conversion of military records into structured credentials.	Discovery of unique and valuable skills represented by transitioning soldiers.
Case Western Reserve University	Mapping university transcript data to skills and competencies.	Development of SkillCertifyAI application using training data from the Open Syllabus Project.	Student-driven collaborative design across multiple universities.
Youni	Utilizing RSDs for hiring and career evaluation.	Expansion of Youni Skills connected with employer needs.	Development of AI-supported technology used for matching and redundancy prevention.
Gobekli	Managing work and education evidence.	Development of conversational AI interface.	Rich, structured skills data for use by human and machine-driven systems.

Education Testing Services	Automated and scalable translation of resumes into actionable, skills-based profiles.	Creation of proof-of-concept technology demonstration.	Improvement of data through connections with existing skills taxonomies.
Workbay	Recognizing and signaling market-relevant skills of incarcerated individuals.	Conversion of informal learning experiences into career-relevant LERs.	Tailored and differentiated approach for correctional environments.
Eduworks	Translating valuable military experiences into employer-actionable credentials.	Requesting articulation and equivalent credentials for traditional recognition.	Transfer support for learners to access traditional learning and employment pathways.
SkyHive	Identifying and recognizing valuable skills from learners with diverse and non-traditional backgrounds.	Development of Skill Passport tool, a visual interface to streamline adoption and use of LERs.	Matching job seekers using market-relevant and in-demand skills as a proxy.

AstrumU in collaboration with National Student Clearinghouse

Organization Descriptions

AstrumU® translates educational experiences into economic opportunity. They are on a mission to quantify the return on education investment for learners, education providers, and employers. AstrumU helps institutions measure the value created for incoming and returning students, while assisting them in securing industry partnerships that lead students seamlessly into high-demand career pathways. Institutions partner with AstrumU® to drive enrollment and increase alumni and corporate engagement, while extending economic mobility opportunities inclusively to all learners.

The National Student Clearinghouse, a nonprofit formed in 1993, is the trusted source for, and leading provider of, higher education verifications and electronic education record exchanges. Besides working with nearly 3,600 postsecondary institutions, the Clearinghouse also provides thousands of high schools and districts with continuing collegiate enrollment, progression, and completion statistics on their alumni.

Project Description

Transitioning Soldiers possess a unique skill set, but the relationship of those skills to civilian job roles is often poorly understood. These skills need to be properly identified, assessed, and translated in order for soldiers to be successfully aligned to a civilian career and communicated to the hiring world. The first step in ensuring this alignment, is to translate the soldier's skills and abilities into a digital format that is both interoperable and portable. AstrumU is using their AI Translation Engine to automate the conversion of military records into OBv3 compliant digital outputs (JSON-LD) that can be ported into National Student Clearinghouse's digital wallet, MyHub.

Project Highlights

- Transitioning soldiers possess unique skill sets that are often poorly understood in the civilian job market.
- Proper identification, assessment, and translation of these skills are necessary for successful alignment with civilian careers.
- AstrumU's AI Translation Engine automates the conversion of military records into OBv3-compliant digital outputs for portability into National Student Clearinghouse's MyHub digital wallet.

Case Western Reserve University

Organization Descriptions

Case Western Reserve University is a private research university in Cleveland, Ohio. xLab at CWRU engages with industry partners to develop knowledge and talent for responsible digital innovations. Working with a team of multidisciplinary students, faculty, and other centers throughout the University, xLab develops responsible technology frameworks and tools, and works with its company partners to design new digital innovations for products, services, and business models.

Project Description

Our Experience You project is SkillCertifyAI. It is an innovative application solution that takes in structured data about university transcripts (in the form of PDF files) and academic courses and maps them to a vector of skill competencies for students using a Natural Language Processing framework model. The Natural Language Processing framework leveraged for this project has been collaboratively designed by the University of Pittsburgh, Chapman University, and Columbia University. After generating skills for the students, the SkillCertifyAI application allows students to generate a set of blockchain-anchored micro-credentials for those skills using Velocity Network Foundation blockchain solution.

Project Highlights

- SkillCertifyAI is a unique application that helps students map their university transcript data to skill competencies.
- It uses a Natural Language Processing framework model and was designed collaboratively by multiple universities.
 - the University of Pittsburgh
 - Chapman University, and
 - Columbia University
- Students can create blockchain-anchored micro-credentials for their skills using Velocity Network Foundation blockchain solution.

Youni

Organization Description

Youni is a website which offers its users the ability to explore classes, find jobs and build custom career pathways. Currently on Youni educators and employers can post their class or job and have it automatically matched to a growing database of RSDs. What makes Youni different from other job boards and class

marketplace is its focus on connecting education to outcomes and encouraging the direct connection between a network of employers and educators.

Project Description

Our goal with Experience You was to leverage new AI technology to make it easier for students and employers to utilize RSDs for hiring and the evaluation of career pathways. The goal of Experience You for our team was the build out of Youni Skills. With Youni skills students will be able to upload their resumes or connect their LearnCard digital wallet and convert it to an RSD format which can be used to evaluate classes or apply for jobs on our site.

With the release of Rich Skill Descriptors (RSDs), educators worldwide began to log and define skills learned by students in a machine-readable format. While this is a meaningful change, many employers and employees still have no idea what RSDs are. Our goal with Experience You was to leverage new AI technology to make it easier for students and employers to utilize RSDs for hiring and evaluating career pathways.

The goal of Experience You for our team was the build-out of Youni Skills. With Youni skills, students will be able to upload their resumes or connect their LearnCard digital wallet and convert it to an RSD format which can be used to evaluate classes or apply for jobs on our site. Using the OpenAI function call, we are able to read student, job, and class data and match it to the RSDs in our database, which are most compatible. The goal of this is for candidates to have transparency when taking classes and applying for jobs, as their resume or profile will follow the exact same syntax as the pathways they are following. This will also allow them to better understand how their experiences map to jobs and classes.

Another problem we aimed to solve is the growth and management of a living skills library. Often redundant or duplicate skills are generated as multiple entities begin to participate. With the OpenAI function we wrote, we will be able to match new entries to existing skills, preventing redundancies, and allow only unique skills to be added in the OBv3 format.

Highlights

- The goal of Youni's project with Experience You was to leverage new AI technology to make it easier for students and employers to utilize and align RSDs for hiring and evaluating career pathways.
- Youni Skills helps students to convert their resumes or LearnCard Digital Wallet to an RSD format for transparency in classes to later translate into job applications.
- Youni's approach to publishing skills into OBv3 format reduces redundancies (duplicate skills embodied by separate badges) and allows unique skills to be added in the OBv3 format with the help of the OpenAI function call.

Gobekli

Organization Description

Gobekli is an early stage, pre-product start up, building a Universal Talent Passport to put the experience of the individuals first in the emerging LER ecosystem by enabling people to create for themselves the talent data organizations want to adopt.

Gobekli believes that if everyone had an easy, valuable, and rewarding experience to help them collect, contextualize and leverage their entire work and education record, they could be better equipped to understand, represent and grow themselves through each stage in their life journeys.

Project Description

Incumbent and unemployed workers, veterans and alumni – credentialed and uncredentialed – all struggle to manage and leverage their work and education evidence in an easy and meaningful way.

Our goal is to build an app that makes it easy for everyone to collect, combine, contextualize, filter, and share their work and education data and evidence in a way that benefits themselves and helps their chosen organizations become better partners for growth.

Our objective was to test the two basic design foundations of that app's experience, namely the AI conversational interface, as well as the mapping of talent data into a talent tree that can be visualized in a meaningful way.

This structures all the data into a format they can later share with both humans and machines in various ways for various purposes.

Highlights

- Gobekli's solution seeks to make it easy for all types of workers to manage and leverage their work and educational evidence
- Gobekli's solution is designed with an AI conversational interface and a skills-based talent tree that includes data visualizations
- Gobekli's solution structures data into a format that can be shared and leveraged by both humans and machines for various purposes via structured metadata

ETS

Organization Description

Educational Testing Service (ETS) is the world's largest private nonprofit educational testing and assessment organization. ETS develops various standardized tests for K–12, higher education, and the workforce. ETS owns international tests including the TOEFL (Test of English as a Foreign Language), TOEIC (Test of English for International Communication), Graduate Record Examination (GRE) General and Subject Tests, and The Praxis test Series—in more than 180 countries, and at over 9,000 locations worldwide. Many of the assessments it develops are associated with entry to US tertiary (undergraduate) and quaternary education (graduate) institutions, but it also develops K–12 statewide assessments used for accountability testing in many states, including California, Texas, Tennessee, and Virginia. In total, ETS annually administers 40 million exams in the U.S. and in 180 other countries.

Project Description

ETS XpU team is set to create and present a proof-of-concept tech demo in which incumbent workers' learning and working records (e.g., CV/resume, cover letter, transcripts) are translated and mapped into skill profile based on a general skills ontology/framework using an AI tool.

Highlights

- ETS's solution is designed to translate and map resumes, cover letters, and transcripts into a skills-based profile connected with existing or future skills taxonomies and frameworks.

Workbay in collaboration with Participate and Cal-State University Dominguez Hills

Organization Descriptions

- **Workbay** is an interactive career development, training and recruitment platform that links job posting and applicant tracking, skill building and career navigation into one system delivered via Web and mobile iOS and Android applications. Workbay provides a localized customized system of support for economic stakeholders to achieve their goals.
- **Participate's** platform and services are specifically designed to support and operationalize Communities of Practice.
- **California State University, Dominguez Hills Workforce Integration Network** uses advanced technological resources, combined with university and industry-generated business data, to demonstrate the benefits of the CSUDH educational experience to all stakeholders.

Project Description

Incarcerated individuals often possess unrecognized and unverified skills, knowledge, and interests gained from learning and employment experiences. On release, these individuals face significant barriers to employment and skill recognition.

Our project, supported by the XPU mentorship program, converts these informal experiences into structured Learning and Employment Records (LERs). We transform self-declarations and unstructured data from users into verifiable credentials, making them easily accessible post-release for the individual, workforce agents, employers, and community release programs.

The process involves an automated interview, eliciting information on skills, knowledge, interests, education, experience, and goals. To accommodate the unique restrictions of correctional environments, such as inmates' inability to enter free-form text and potential literacy limitations, our approach was tailored and iterative, involving the direct engagement of incarcerated individuals.

In compliance with Open Recognition principles, we aimed to make skills recognition visible and actionable wherever acquired, while also respecting the rights of individuals and communities to name their skills and competencies.

The user's narrative is processed to identify competencies and issue verifiable credentials using OBv3 standards. These credentials are stored in our database and may include additional ones earned through online learning on our platform and third-party credentialing.

On release, users can log into our national community site, freely accessing and sharing their credentials. As an extension of our XpU work, a pilot project is underway to engage correctional institutions as issuers of credentials for inmates' employment within correctional settings.

Highlights

Workbay converts the informal experiences of incarcerated individuals into structured Learning and Employment Records (LERs).

They use an automated interview process to identify skills, knowledge, interests, education, experience, and goals.

Verifiable credentials are issued using OBv3 standards, stored in their database, and accessible to users on their national community site post-release.

Eduworks

Organization Description

Eduworks applies advanced technologies to deliver solutions to the biggest challenges in human performance, lifelong learning, and career planning. Eduworks' solutions have consistently pushed the envelope in human-first applications of AI. Eduworks and partner organizations, including Credential Engine, National Labor Exchange, Emerson Collective, and National Science Foundation, have worked together to present a new data-driven perspective on learning and careers. Our human performance data management solutions are used in major public companies, nonprofit organizations, and government agencies to better understand people. Our solutions include our EnlightN AI models that extract, align, and debias skill data from unstructured sources, the Competency and Skills System (CaSS) used to store and manage skills frameworks, and our talent digitization platform used to integrate human performance data sources across an entire organization.

Project Description

Using military documentation as inputs from transitioning warfighters to request articulation, grants, or accelerated assessment of equivalent credentials in related industries from credentialing bodies.

Highlights

- Standard military learning and training experience documentation was used as input for Eduwork's Experience YOU project solution.
- Documentation is used to request articulation, grants, or accelerated assessment of equivalent credentials to support a transition to traditional, college-level learning pathways/programs.
- Documentation is also used to translate military experience and training into equivalent credentials in related industries.

SkyHive

Organization Description

SkyHive is a Certified B Corporation and generative AI software company that is passionate about using innovative technology to transform the world of work. Our patented, AI-driven technology solutions are designed to rapidly reskill workers and help organizations stay ahead of the curve. We believe that the future of work is all about skills, and our commitment to ethical AI has earned us recognition from industry experts. By providing a real-time and fluid understanding of global workforce data, we help you bridge skills gaps and drive progress through rapid reskilling. We proudly serve organizations, governments, educators, and individuals.

Project Description

SkyHive's Skill Passport helps users from diverse backgrounds identify their skills from formal and informal work and learning experiences, explore career pathways aligned to the transferability of their skills, explore real-time job opportunities available to them, and assess the degree to which their current skills match those roles, and identify opportunities to upskill for greater career and economic mobility based on global labor market insights.

By inferring skills from resume and online profile information, and provoking users to enhance their skills profile using prompts informed by real-time labor market information, we attempt to solve two problems:

1. Matching jobseekers to opportunities on the basis of skills over proxies-for-skill acquisition such as previous job titles, degrees, schools they've attended, or what they majored in, and,
2. Helping jobseekers and students use the processes of workforce development and job search to gain skills acumen and build confidence to support them throughout their careers.

Highlights

- The Skill Passport tool helps users identify and articulate their skills from various work and learning experiences.
- The Skill Passport tool allows users to explore career pathways based on the transferability of their current skills that connect them with real-time job opportunities.
- The value of the tool is twofold: It matches job seekers using skills as a proxy, instead of traditional proxies, including job history, previous titles, degrees, etc. The tool also identifies individual skills gaps and connects them with experiences that can bridge those gaps throughout a lifelong learning journey.

Proof of Concept Requirements

1. Collect unstructured, relevant data aligned with key personas
2. Describe the characteristics of the population chosen for this project
3. Identify and test AI algorithm(s) selected to transform [unstructured data](#) into the relevant properties of a data model suitable for representation in a structured LER/VC
4. Articulate equity-based design and bias considerations the AI algorithm might impact and consider corrections that might be needed
5. Convert the unstructured representation of the subjects participating in the pilot into structured JSON-LD formats: required targets → OBv3/CLRv2/VC-DM1.1
6. Explainability: Describe algorithms in methods that can be interpreted and understood by the holder. This may include decision trees, schema mappings, etc.
7. LER conformance tests: Demonstrate compliance with selected LER compatible data specifications
8. [Validation](#) process: Display as LER that is both human-readable and machine actionable Demonstrate conformation to the standards for representing LERs the teams' selected