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SkillUp's AI Vision: Leveraging an AI Paradigm Shift to Achieve Economic Mobility for STARs

This paper explores the impact, technical architecture and future plans of SkillUp's AI-powered career navigation platform, aimed at helping non-degree job seekers and individuals skilled through alternative routes (STARs) achieve economic mobility

SKILLUP

Introduction

This paper explores the proven impact, technical architecture and future roadmap of SkillUp's evolving, AI-powered career navigation platform. Our mission is to assist young adults, non-degree job seekers and individuals skilled through alternative routes (STARs) in achieving true economic mobility through non-degree pathways.

Achieving this widespread economic mobility requires a collaborative and systematic effort. That's why we're creating visibility into our AI platform learnings gathered from thousands of SkillUp users, while simultaneously building new infrastructure that others can plug into. We aim to seamlessly integrate resources of our workforce and social service partners, ensuring a smooth, AI-powered experience for users that maximizes impact across the entire journey to economic mobility.

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I. The AI Paradigm Shift:

Solving Historical Barriers

Historically, the path to economic mobility was hampered by three primary barriers:

- Lack of Incentives: A systemic gap in partner motivation existed.
- Lack of Capacity: There were not enough resources to support every learner.
- Lack of Integrated Data: Fragmented information systems presented major challenges and dependencies.

An AI-driven paradigm shift has rapidly reduced many challenges associated with the lack of capacity and integrated data. This shift allows SkillUp to focus its product vision on the crucial challenge of economic mobility: the lack of systematic incentives and partner motivation.

SkillUp's product vision remains worker-centric, while leveraging AI to integrate existing partner systems for a seamless, supported experience. It connects quality standards and partnerships, alongside real-time support, to achieve optimal impact and outcomes. For users, it simplifies, it personalizes, and it acts longitudinally across the ongoing journey to economic mobility.

SkillUp's Key Objectives for Advancing Economic Mobility for STARs with AI:

1. Solve the Primary Barrier and Underserved Need

- Focus the product vision on addressing the remaining, most significant challenge to economic mobility: the lack of systematic incentives and partner motivation. Mobilize partner services for STARs through an integrated, personalized experience.

1. Solve the Primary Barrier and Underserved Need (cont.)

- Guide STARs to job attainment and training enrollment by providing continuous support, building on the proven impact of the SkillUp AI Assistant, which is credited with contributing to an estimated 353 jobs attained and 439 training enrollments in its earliest implementations.

2. Deliver Integrated, Orchestrated and Worker-Centered Support

- Close the support gap by coordinating multiple specialized AI agents using an LLM-Driven Control Flow to provide personalized, consistent guidance and recommend the next best actions.
- Provide holistic support by creating an Integrated Ecosystem of Career & Social Supports that connects STARs to jobs, training, and adjacent services like financial guidance in a single, unified experience to reduce fragmentation and drop-off.
- Act as a Proactive Career Coach that uses a Journey-Based Memory System to retain a persistent understanding of a worker's goals and barriers over time.

3. Scale the Platform and Prove Investment Impact

- Build an accessible, cost-effective, and scalable AI infrastructure using the Hub-and-Spoke Platform to seamlessly integrate with ecosystem partners.
- Accelerate collective impact by actively seeking partners to plug into the Hub using standardized adapters and collaborate on key integrations, such as the Partner Adaptor Framework, and building new agents.
- Rigorous measurement through the Learning Agenda and Evaluation Framework to demonstrate the investment case and projected impact by tracking key metrics, including time to placement or enrollment, wage at placement, and job quality (Mobility Impact & Acceleration).

Four Pillars of Worker-Centered Support

SkillUp's AI-powered career navigation system is structured around four key pillars to deliver holistic, worker-centered support:



Proactive Career Coach

An AI partner that guides STARs through goal-setting, training, and job search over time, providing a clear, individualized roadmap that reduces decision fatigue.



Journey-Based Memory & Orchestrated Intelligence

Maintains a persistent understanding of the worker's goals and barriers, coordinating multiple AI agents to provide personalized, consistent guidance and recommend the next best actions.



Multi-Modal, Omni-Channel Experience

Engages workers via voice, text, or documents and ensures seamless escalation to human coaches when necessary, maximizing accessibility and trust.



Integrated Ecosystem of Career & Social Supports

Connects STARs to jobs, training, and adjacent services like childcare or financial guidance in a single, unified experience to reduce fragmentation and drop-off.

II. Proven Impact Through Product Evolution

SkillUp’s early work with AI has provided crucial validation and key learning points that inform our platform's future architecture and strategy:

Evolution of AI Experience			
How each test differs in scope, placement, and user flow			
NavGPT	In-Line Experiments	SkillUp AI Assistant	SkillUp AI v2 (SUAI)
Off platform, gated by profile creation	Embedded prompts within the existing experience to drive engagement	Fully integrated AI experience across all catalogs on platform	Complementary AI experience designed to support users through highly personalized coaching experience
<ul style="list-style-type: none"> • Early exploration of AI driven navigation • More experimental, less productized experience • Separate from core Explore experience 	<ul style="list-style-type: none"> • Placed directly within user flow • Mixed friction depending on placement • Focused on incremental behavior changes 	<ul style="list-style-type: none"> • Covers all catalogs training, jobs, careers, resources • Fully in platform end to end experience • No forced profile barrier upfront • Lower friction, more seamless journey • Represents scaled product experience 	<ul style="list-style-type: none"> • Expands beyond traditional browse and search flows • Different entry point and engagement model • Leverages our proprietary catalog of pathways
AI users had LOWER rates of views, referrals, saves	Slightly higher rates of views, clicks, saves for users who engaged	Significantly higher rates of views + referrals (2x), similar rates of saves	AI coaching that helps STARs build lasting economic mobility - one conversation at a time. (Targets increased discovery, engagement, action)

Validation of Impact

Early implementation of AI within the SkillUp platform has already demonstrated significant real-world impact:

- **Job Attainment:** The SkillUp AI Assistant is credited with contributing to an estimated 353 jobs attained, confirming its efficacy in moving STARs into employment.
- **Training Enrollment:** The SkillUp AI Assistant contributed to 439 training enrollments, proving its success in guiding workers toward necessary skill-building opportunities.
- **Core Focus Justified:** This early success validates the core product strategy to focus on removing partner barriers to mobilize partner services for STARs.

Key Learning Points for Architectural Strategy

The observed impact and user experience have shaped the subsequent architectural decisions:

- **The Need for Orchestration:** Initial deployments highlighted the need to move beyond simple, single-agent interactions. This led to the development of the LLM-Driven Control Flow to coordinate specialized AI agents for consistent, personalized, and structured support.
- **The Power of Persistence:** Effective coaching requires memory. The success of ongoing engagement informed the design of the Long Term Memory System and the Journey-Based Memory System, ensuring the AI acts as a persistent, proactive coach that remembers a worker's goals and barriers over time.
- **Scalability is Paramount:** To accelerate the proven impact, the team identified the necessity of a highly scalable and cost-effective integration method, leading directly to the design and implementation of the Hub-and-Spoke Platform and the Partner Adaptor Framework.
- **Quality Must Be Built-In:** To ensure reliable and trustworthy support for a vulnerable population, the platform required a dedicated, internal mechanism for continuous improvement. This led to the creation of the fully owned Dedicated Evaluation Framework, ensuring quality is measured and engineered at every step.

III. Technical Architecture for Quality and Adaption

SkillUp's focus on quality measurement and evaluation is integrated directly into its technical architecture, which provides structured, adaptive and scalable support.

Core Architecture Systems for Quality and Adaption

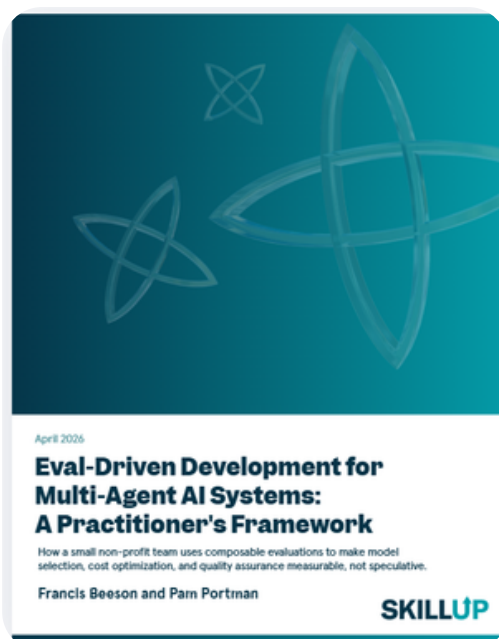
SkillUp's evolving AI-powered career navigation system is built on key systems to ensure non-deterministic, yet structured, personalization:

- Long Term Memory System (What SkillUp Knows): Retains user information across sessions, life changes, and years, learning through conversation rather than traditional forms. This memory is shared across all surfaces - chatbot, website, SMS, mobile, and partner services (where approved by the worker) - allowing personalization to compound over time.
- LLM-Driven Control Flow (What SkillUp Decides): Replaces the non-deterministic nature of current AI agents and the hard-coded if-then rules of traditional AI. SkillUp AI uses 10 specialized agents and a two-phase orchestration pipeline to make structured decisions on every turn regarding the user's journey stage, emotional state, progress, and recommendations. The design is extensible, allowing new agents (e.g., routing, guardrails) to be added without modifying existing ones.
- Dynamic Prompt Composition (What SkillUp Adapts): Avoids a single, static "god prompt," instead dynamically assembling the narrator's prompt on every turn from 45 modular components and 8 composition layers (including Personality, Emotional tone, User memory, and Conversation history).
- Hub-and-Spoke Platform (How SkillUp Scales): This architecture provides a stable platform core (the Hub) for orchestration, memory, personalization, and evaluation. Spokes (partners, agents, data sources, and client surfaces) plug into the Hub using standardized adapters, making it highly cost-effective and scalable.

The Dedicated Evaluation Framework

Other AI tools are black boxes, but SkillUp's evaluation framework ensures our AI tools draw from rigorously vetted, quality standards-aligned data. The Evaluation Framework (How Quality is measured), is built internally with zero external dependencies, making it fully owned and adaptable.

- **Primary Tool for Engineering Decisions:** It is used as the primary tool for engineering decisions like model selection, prompt changes, and regression testing.
- **Key Features:** It uses seven composable validators (Exact, OneOf, AllOf, Contains, Substring, ListMatches, and LLM-as-judge) and has built-in comparison to swap an LLM provider, re-run the same eval suite, and compare accuracy, latency, and cost side by side.
- **Agent Requirement:** Every new agent must ship with eval cases that define its expected behavior before deployment.



[Download Framework Here](#)

V. AI Roadmap and Learning Agenda

The SkillUp Roadmap is a phased plan outlining the product's trajectory and long-term strategic goals.

Roadmap Overview

SkillUp's evolving AI-powered career navigation system is built on key systems to ensure non-deterministic, yet structured, personalization:

- Developer Grade MVP: Open source, user tested. Includes core features like Conversational Coaching, Recommendations, Voice AI, and the dedicated Eval Framework.
- Now (Phase 2 Integration): Immediate focus areas include deploying an Integrated Dashboard and Chat client, Career Comparison with Personalization, and a Career Path feature with geolocated options, targeting a 1k user ramp by Summer '26.
- Next (Partnership Integration): This phase centers on key integrations, such as the Goldi Integration, and building out the Partner Adaptor Framework, API Gateway, and a Nudge Generator Agent.
- Later: Long-term bets include Dashboard expansion, a native mobile app, a Single UX for all partners, and the development of a Personality Matcher Agent for enhanced personalization,

Roadmap Overview Continued...

Product Roadmap Overview

A unified view of our product trajectory — from what's live today to our long-term strategic bets.

	✔ Live	🔧 Now	📅 Next	💡 Later
Phases	SSAI MVP Developer Grade	SUAI & SkillUp Integration	SUAI Partnership Integration	SUAI Worker Ramp to 10k
Feature	<ul style="list-style-type: none"> • Conversational Coaching • Recommendations • Voice AI • Memory • Partner Integrations • Eval Framework 	<ul style="list-style-type: none"> • Integrated Dashboard & Chat client • Career Comparison & Personalization • Career Path w/ geolocated training and jobs options • Skills, including hidden • Introduce my personal assistant • Accountability tracker 	<ul style="list-style-type: none"> • Goldi Integration (production ready): My network, Conversation coach mode • Partner 2: ex. Human Coaching • Partner 3 	<ul style="list-style-type: none"> • Dashboard expansion • Mobile app • Single ux for all partners • Additional features
Architecture	<ul style="list-style-type: none"> • Infrastructure • Orchestration • Multi-LLM Strategy • Hexagonal Architecture • Observability • Manual Data Import 	<ul style="list-style-type: none"> • Authentication • Bi-directional memory mapping • Orchestration: Intent parking, forward guidance, parallel dispatch • Security Guardrails & Eval framework expansion • Platform hardening • Product analytics foundation 	<ul style="list-style-type: none"> • API Gateway • User permissions • Partner Adaptor Framework • Nudge Generator Agent • Infrastructure scaling • Quality Scoring Agent • Memory migration (cost savings) 	<ul style="list-style-type: none"> • Personality Matcher Agent • Additional Cost optimization • Additional platform hardening & scaling • Additional components

📅 Next Milestone — 1k user ramp targeting Summer '26 availability.

This roadmap is subject to change and does not imply a commitment.

Learning Agenda

This project includes a Learning Agenda to rigorously understand the impact of AI features on user experience and the partner ecosystem across four key areas:

- **Mobility Impact & Acceleration:** Measuring time to placement or enrollment, wage at placement, and job quality to demonstrate whether agentic AI accelerates economic mobility.
- **Engagement, Trust & Behavior Change:** Measuring re-engagement rate, recommendation acceptance, and shifts in confidence/optimism to test if AI features function as a long-term partner capable of influencing behavior.
- **Value of Agentic Orchestration:** Measuring usage by agent type and task completion to focus product development on the highest-impact agentic capabilities.
- **Experience, Modality & Ecosystem Fit:** Measuring channel usage, onboarding friction, and referral uptake to ensure the system is accessible and scalable across users and partners.

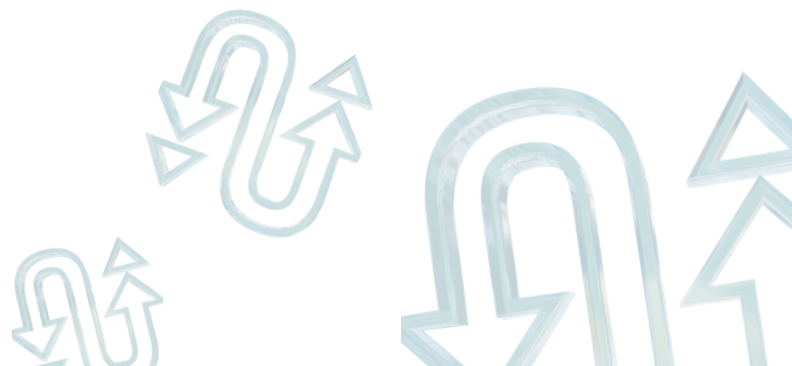


Partner with SkillUp Coalition

We seek mission-aligned organizations to integrate within our experience and amplify impact for STARs. Join us to:

- Scale Proven Impact: Integrate your services via our Partner Adaptor Framework to reach more STARs and increase job attainment and training enrollment numbers, building on the impact already credited to the SkillUp AI.
- Contribute to Agentic Intelligence: Collaborate in the Next phase of our roadmap by integrating new capabilities and realizing the vision of a Single UX for all partners.
- Solve the Final Barrier: Leverage our Proactive Career Coach and Journey-Based Memory to provide hyper-personalized incentives that drive long-term user engagement and behavior change.

To discuss integration and collaboration opportunities, please share your contact information at skillup.org/partners



The image features a teal background with several large, stylized, 3D-effect icons. These icons include a large 'U' with an upward-pointing arrow, a circular arrow, and a jagged arrow pointing upwards. The SkillUp logo is positioned in the top left corner.

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www.skillup.org

Partner with SkillUp and accelerate economic mobility for millions of workers. To discuss integration and collaboration opportunities, please share your contact information at skillup.org/partners