

Product Requirement Document (PRD) – SkillForge

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1. Project Overview

Product Name: SkillForge

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Purpose:

SkillForge is an AI-integrated, real-time collaborative learning platform designed to help students, job-seekers, and developers connect, practice, and improve their skills together. The platform combines mock interviews, resume feedback, peer-to-peer coding, and AI mentoring in one seamless experience.

Vision:

To create a unified learning hub that empowers users to skill up fast through collaboration, structured feedback, and AI-assisted coaching — simulating the support system found in top tech environments.

2. Problem Statement

- Most learners struggle with fragmented resources: one platform for mock interviews, another for resume reviews, and another for practice.
 - Lack of real-time peer collaboration leads to isolated learning and poor preparation for real-world team-based roles.
 - Access to mentors is limited or expensive, and scheduling is hard.
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3. Goals & Objectives

- Enable real-time coding and communication between users.

- Offer AI-powered resume and code reviews.
 - Facilitate mock interviews and feedback sessions.
 - Match users based on skills, time zone, and goals.
 - Build a portfolio through peer projects, validated with peer and AI input.
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4. Target Audience

- Students preparing for interviews
 - Self-taught developers seeking practice
 - Bootcamp grads who want collaboration
 - Job-seekers aiming to improve soft/hard skills
 - Mentors looking to share knowledge
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5. User Stories

- As a **learner**, I want to request instant help on a coding problem so that I can move forward faster.
 - As a **mentor**, I want to view a user's code in real-time and provide feedback.
 - As a **job-seeker**, I want AI to review my resume and provide corrections/suggestions.
 - As a **developer**, I want to collaborate with peers on projects and get matched automatically.
 - As a **user**, I want to join mock interviews with random users or mentors.
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6. Core Features

Module	Description
Authentication	User sign-up/login with role-based access (learner, mentor).
Real-Time Collaboration	Code editor (Monaco), video chat (WebRTC), and chat (WebSockets).

AI Resume & Code Review	Use OpenAI/Gemini for resume suggestions, code quality tips, etc.
Mock Interviews	Random match, coding challenge with timer, evaluation form.
Skill Matchmaking Engine	AI-based skill-tagged user matching.
Project Collaboration Rooms	Real-time coding spaces to work on full-stack projects together.
User Dashboard	View history, stats, feedback, AI tips, and skill growth.

7. Technology Stack

Layer	Tech
Frontend	React.js, Tailwind CSS, Socket.io-client, WebRTC, Vite
Backend	Spring Boot (microservices), WebSockets, Spring Security
Database	PostgreSQL, Redis (caching & matchmaking)
AI Integration	OpenAI / Gemini (via Spring AI or direct API)
DevOps	Docker, GitHub Actions, Nginx, AWS EC2
Docs/Design	Swagger (API), Notion/Confluence, Lucidchart for architecture

8. Success Metrics (KPIs)

- Time to complete a successful match (goal: <10s).
- Resume review quality score (via user feedback).
- Mock interview completion rate.
- DAUs (Daily Active Users) and session duration.
- Number of peer projects completed per user.

9. Milestones (8-Week Timeline)

Week	Milestone
1	PRD Finalization, Repo Setup, Auth Service
2	User Profile & Role Management

3	Matchmaking Engine (skill tags, queue, Redis)
4	Real-time Collaboration Module (Chat, Code)
5	AI Resume & Code Review Service
6	Mock Interview Flow + Feedback
7	Dashboard & Project Collaboration Module
8	Testing, CI/CD, Final Deployment, Docs, Demo Video

10. Future Enhancements (Optional Later)

- Mobile app version using React Native
- Leaderboards and gamification
- GitHub integration for project uploads
- AI-based code debugging assistant