SkillsNavigator.ai

Personalized Learning Roadmaps, Powered by AI

Lana Ermolaeva, Adilya Saifetdiarova, Bulat Gazizov, Ivan Ershov, Arthur Popov

Project Overview

SkillsNavigator.ai helps users build personalized learning journeys, tailored to their skills, goals, time, and budget.

We solve the “too many courses, not enough guidance” problem by recommending only what matters for each learner.

The Problem

Overwhelmed by Choices: So many online courses, but little clear guidance.

Lack of Personalization: Most platforms don’t match your unique skill level, language, or budget.

Progress Tracking Gaps: Hard to track learning or see clear next steps.

Our Solution

AI-Driven Recommendations: Using vector search and ML, we find the best free/affordable courses for your goals.

Personalized Roadmaps: Dynamic, step-by-step learning plans based on your needs and constraints.

Interactive Progress Tracking: Easy roadmap view, track your learning, revisit previous chats, and sync progress with Stepik.

Key Features

Chat-Based Onboarding: Just tell us your goal, skill level, and time—get instant recommendations.

Real-Time Vector Search: AI matches your input to relevant courses.

One-Click Roadmap Generation: Build your learning path instantly.

Rich Course Details: See all course info (difficulty, duration, price, ratings, etc.) in one place.

Multi-Chat & Roadmap Support: Manage several learning journeys at once.

Stepik Integration: Log in, sync progress, view your history—seamless experience.

How it Works

User inputs: Goal, current skill, and available time.

System processes: Uses Qdrant vector search and LLM logic to find and order the best courses.

Personalized output: Roadmap with interactive nodes, each linking to a real course.

Progress tracked: Via Stepik integration and persistent user history.

Tech Stack

Frontend: React (clean, minimalistic, interactive)

Backend: FastAPI (async, modern Python API)

Vector DB: Qdrant

ML/AI: Deepseek, PyTorch, custom logic

Database: PostgreSQL

DevOps: Docker, GitHub Actions, CI/CD pipelines, Nginx, Certbot for HTTPS

Development Process

Agile workflow: Weekly sprints, regular backlog grooming, continuous deployment.

Automated Testing: Unit, integration, E2E, and frontend tests in CI pipeline.

User-Centric Design: Regular user feedback sessions; implemented high-priority usability improvements.

Continuous Improvement: Features added based on user feedback (persistent chat, improved roadmap UX, multi-path support, etc.).

User Feedback & Iteration

Conducted multiple user testing sessions with real learners.

Iteratively improved based on suggestions:

- Persistent chat and roadmaps
- “Go to Roadmap” button
- Clearer progress visuals
- Enhanced search accuracy (multi-language)
- Fast, responsive design

Project Results

Fully functional MVP live at skillsnavigator.ru

Ready for real users: Supports multiple learning journeys, persistent history, and real-time progress.

Scalable, maintainable architecture: Dockerized, tested, documented.

Challenges Faced

Saving message in the chat logic

Vector search constrains

Long progress loading

Different time zones of the team members, team members and TA

Course assignments and projects overlap

Lessons Learned

User experiece above optimisation

Add another semantic layer

Think artful

Long progress loading

Flexible and dynamic timeschedule

Be determined

Team contribution

- Lana Ermolaeva: Project/product management, ML, planning, user testing, documentation.
- Adilya Saifetdiarova: Frontend, UI/UX, Figma, performance improvements, chat/roadmap UX.
- Ivan Ershov: ML, course selection logic, backend performance, Deepseek integration.
- Bulat Gazizov: Backend, DevOps, PostgreSQL, Stepik/roadmap APIs, authorization.
- Arthur Popov: Backend, MLOps, CI/CD automation, Docker Registry setup, pipeline optimization.

Future work

Adapt for mobile

More course platforms

Export & Share