Sara Zou

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EDUCATION

Northeastern University, **Khoury College of Computer Sciences** Boston MA

Bachelor of Science in Computer Science, Software Concentration | GPA: 3.48/4.0 Expected: Jun 2028

Relevant Coursework: Algorithms & Data Structures, Computer Systems, Object-Oriented Design, Databases, Data Science, Cybersecurity, Web Development

TECHNICAL SKILLS

Languages: Java, Python, C, JavaScript, TypeScript, SQL, HTML/CSS, OCaml, Assembly

Frameworks & Libraries: PyTorch, NumPy, Pandas, scikit-learn, React, Node.js, Next.js, Flask, Vue.js, Nuxt

Services & Tools: Figma, Linux, Git, GitHub, Docker, MySQL, Jupyter, Vercel, Render

Concepts: REST APIs, Machine Learning, Deep Learning, Database Design, MVC, Unix/Shell, Data Pipeline

EXPERIENCE

Team IMPACT (via ACM) – *Software Engineer* Sep 2026 – Present

- Designed and tuned a feed ranking algorithm combining recency, community, and engagement, testing 120 configurations against preset targets to raise users' top 10 feed posts diversity from 1 community to 4 with no loss in post recency.
- Built the React Native feed with infinite scroll, virtualization, and loading/error state, validated by 89 checks across 7 user roles.
- Implemented privacy-aware push notifications with device management, keeping sensitive membership off lockscreen.

Aptli – *Software Engineering co-op* Jul 2026 – Present

- Prototyped a reusable fuzzy search feature in TypeScript/Nuxt that tolerates typos and whitespace variations across global and category-specific application search, extending the feature to a duplication detection system.
- Built a reusable AI chat embed product, including a customer-facing widget, configuration and account setup pages, an authentication flow, and a supporting backend, refined through weekly code and architecture review with CTO.
- Proposed and designed an updated homepage in Figma, with most of the proposed changes adopted.

OWASP VulnerableApp – *Open-Source Contributor* Aug – Sep 2026

- Implemented a 5-level OTP authentication security lab in Java/Spring demonstrating progressive hardening from brute-forceable 4-digit codes to a secure implementation with SecureRandom, expiry, attempt limiting, one-time use, and rate limiting.
- Built the full module including REST endpoints, JPA entities, database schema, H2 seeding, HTML/JS frontend templates, i18n keys and unit tests following the project's MVC architecture and maintainer code review feedback.

PROJECTS

Campus Navigator – *Python, FastAPI, JavaScript, OSMnx* Sep – Nov 2026

- Built a service routing to a building's best entrance for walking or wheelchair over a 2,060-node, 2,727 edge campus graph.
- Implemented Dijkstra with pluggable cost functions and multi-target search, plus GPS snapping onto path segments.
- Built a validated pipeline from ArcGIS and OpenStreetMap data into a dynamic schema, and a REST API with ~290 tests.

AI Artwork Detector – *Python, PyTorch, Flask, React* Mar – Jun 2026

- Built and fine-tuned a ResNet-18 image classifier to distinguish AI-generated and human-made art using a 160k-image dataset.
- Implemented a ML pipeline covering data loading, 70/15/15 train/validation/test splitting, training, evaluation, and inference.
- Achieved 98.7% test accuracy and 0.999 ROC-AUC on 24k held-out images, evaluated via confusion matrices and F1 score.
- Integrated the trained model with a Flask inference API and used React to support real-time image upload and prediction.

Kambaz – *React, Node.js, REST API, MongoDB* Jan – May 2026

- Built a full-stack learning management platform with React frontend, Node.js backend services, and MongoDB.
- Designed Mongoose schemas and REST endpoints supporting CRUD operations across courses, assignments, and users.
- Implemented authentication and role-based access control and deployed frontend, backend, and cloud services.

ACTIVITIES

Agents on the Edge Hackathon – *Creativity Award Winner* Mar 2026

- Built a real-time YouTube fact-checking Chrome extension agent with Subconscious Agent API, team of 2, ~80 participants.

IBM Z Xplore Concepts Badge – learned fundamental IBM Z skills and concepts Dec 2025