Khanh Vy (Vivian) O

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EDUCATION

University of Michigan - College of Literature, Science, and the Arts (LSA) **Aug 2022 - Dec 2026**
B.S., Computer Science & Cognitive Science *Ann Arbor*

- **Achievements:** James B. Angell Scholar, University Honors, Margaret Smith Hunt Scholarship, Michigan Competitive Scholarship
- **Coursework:** Data Structures and Algorithms, Computer Organization, Web Systems, Machine Learning, Computer Security, Software Engineering, AI in Education, Needs Assessment and Usability Evaluation, Discrete Mathematics, Calculus 1-3, Linear Algebra

TECHNICAL SKILLS

- **Languages**: Python, JavaScript, Java, C/C++, SQL, R
- **Frameworks & Libraries**: Django, Flask, React, Node.js, Meteor, Material-UI, PyTorch, TensorFlow, scikit-learn
- **Databases**: PostgreSQL, MySQL, MongoDB, SQLite
- **APIs & Backend**: REST APIs, OpenAI API, Gemini API, JSON endpoints
- **Tools**: Linux, AWS, Docker, Git, GDB, Cppcheck, Infer (Meta), Valgrind, AddressSanitizer, AFL++, Oracle VirtualBox, Figma, Unity

EXPERIENCE

Grasping the Rationale of Instructional Practice Lab (U-M Marsal Family School of Education) **Sep 2024 - Present**
Research Assistant

- Developed and maintained full-stack features using REST APIs, React, Node.js, MongoDB, and Material-UI, powering key platform modules like user accounts, video commentary settings, and license management.
- Built 10+ dynamic UI components with stateful logic and backend integrations, improving usability and reducing front-end code redundancy by 25%.
- Conducted iterative testing, debugging, and deployment to enhance system reliability and integrate feedback from 1,000+ active users.
- Facilitated user research with international math educators, synthesizing insights to inform product improvements and support collaborative lesson planning.
- Automated data workflows and planning pipelines using Google Sheets and Canvas LMS.

Alternate Reality Initiative **Sep 2023 - Present**
Vice President

- Designed, implemented, and maintained the club website using HTML/CSS, Wix, and Figma, improving SEO and accessibility (WCAG 2.1) and increasing user engagement by 132%.
- Coordinated technical workshops on XR development teaching tools (e.g., Unity, Niantic Studio and Meta Quest Horizon).

U-M Library Scholars Program **May 2025 - Aug 2025**
Library Research Intern

- Conducted qualitative research on first-generation international students' experiences with U-M Library services through generative user interviews and thematic analysis using Dedoose.
- Coded a random stratified sampling Google Apps Script to recruit interview participants via Qualtrics and Calendly.
- Created an affinity diagram and presentation deck using Figma and Canva, translating research insights into actionable recommendations for library staff.

PROJECTS

AI French Tutor - LingBuddy **Aug 2025 - Nov 2025**

- Built a full-stack Django & SQLite learning platform with a rule-based mastery engine and adaptive scoring.
- Implemented dynamic sub-question pipelines (tense, subject, plurality, conjugation) with user-specific priority queues.
- Integrated OpenAI GPT models to provide real-time French grammar feedback and scenario-based conversation tutoring.
- Developed a responsive front-end using JavaScript, HTML/CSS, and custom Figma-designed UI.

Kelsey Museum of Archaeology WebAR Exhibit **Jan 2025 - Nov 2025**

- Engineered an interactive AR experience for the Kelsey Museum using Unity, Niantic 8th Wall, and WebAR pipelines.
- Directed UI/UX flows in Figma and implemented them into functional AR scenes.
- Led collaboration with curators & educators to refine interaction requirements and accessibility constraints.

Dog Image Classifier - Supervised Machine Learning **Oct 2025 - Nov 2025**

- Built an end-to-end dog image classification pipeline in Python using PyTorch with preprocessing, normalization, and dataset augmentation.
- Implemented and trained CNN architectures to classify images across multiple dog categories.
- Performed systematic hyperparameter tuning (learning rate, dropout, batch size) to improve accuracy and reduce overfitting.
- Analyzed model performance using loss curves, validation metrics, and misclassification visualizations.