

Yiwen Wu

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Education

Lehigh University

M.S. in Computer Science

B.S. in Computer Science and Engineering

Bethlehem, PA

Aug 2023 - May 2025

Aug 2019 - May 2023

Work Experience

Computer Consultant and Full Stack Developer, UC Irvine, Remote

June 2025 - Present

- Designed and implemented an integrated classroom platform that unified communication, group management, and course materials into a single web application, reducing app switching and learning overhead.
- Developed real-time collaboration workflows including in-app chat, embedded Zoom Video Meeting, automatically meeting recording collection, and email notifications, backed by PostgreSQL for multi-user coordination.

Project Manager and Full Stack Developer, Lehigh University, Bethlehem, PA

Oct 2024 – Present

- Led end-to-end development of **the StemPal Web Pack platform**, independently building the main website and core educational products including MathPal and StatPal.
- Built full-stack learning products with TypeScript, React, Chrome extension workflows, and AI-assisted tutoring features that provide guided hints, step-by-step support, and student interaction tracking.
- Designed instructor-facing analytics and student-facing support flows to collect progress, hint usage, and learning-pattern data for classroom decision-making.
- Originally launched the platform with a Firebase-based architecture, then independently migrated and refactored both frontend and backend to a self-hosted Supabase and PostgreSQL stack for stronger data ownership and operational control.
- Integrated OpenAI-powered prompt workflows to deliver context-aware tutoring assistance based on question type, subject area, and learner progress while avoiding direct answer generation.

Full Stack Developer Intern, Themis AI, Remote

May 2025 – Aug 2025

- Contributed to a local AI legal assistant platform for legal support and case analysis, delivering frontend, backend, and deployment improvements across multiple internal products.
- Supported DevOps operations, website management, chatbot web applications, and company web properties across development and release cycles with CI/CD pipelines using GitHub Actions to automate deployment.

Research Assistant on Web Crawling, Themis AI, Remote

Nov 2024 – May 2025

- Built automated web crawling and data ingestion pipelines with Selenium and BeautifulSoup to collect and process more than 1,000 records from dynamic web sources.
- Implemented failure-recovery mechanisms so long-running jobs could recover from interruptions with minimal manual intervention and periodic execution for recurring data refresh tasks and improved unattended reliability for ongoing research operations.
- Added email notifications, integrated data cleaning steps, and automated Dropbox uploads to create a repeatable end-to-end collection and delivery workflow.

Full Stack Developer Intern, Vistacom Inc., Allentown, PA

Jan 2022 – Dec 2022

- Developed a cloud-based web application for video chatting between patients and nurses in a hospital setting.
- Built frontend workflows in ReactJS and supported backend integration with SQLite and Gradle-based services.

Project Experience

Generative Interactive Design and Evaluation Platform, DASH Lab, Lehigh University

Sep 2024 - Dec 2025

- Developed **GIDEA**, a cross-platform Mac and Vision Pro 3D simulation environment that integrates LLM-generated human behaviors with sensor-driven contexts to replicate and evaluate assistant-user interactions.
- Contributed to an LLM framework that fine-tunes assistant behavior from user behavior and conversation logs, using memory-based personalization techniques for compact and on-device efficient adaptation.
- Helped build research infrastructure that supported scalable human-assistant interaction studies and publication-backed evaluation workflows.

Scooter Dispatch Visualization Platform, DASH Lab, Lehigh University

Feb 2024 - May 2024

- Developed a ReactJS web application to visualize and compare scooter dispatching algorithms for over 1,000

e-scooters, incorporating real-time backend dispatching data to simulate dynamically.

- Built interactive comparison views to evaluate operational strategies and support large-scale mobility-system experimentation.

Parking Violation and Road Network Analytics, DASH Lab, Lehigh University May 2024 - Sep 2024

- Modeled and analyzed around 500,000 parking violation records integrated over 600 census block data and characteristics of the road network in Newark, NJ from 2020 to 2022.
- Built data analysis workflows connecting mobility, census, and road-network features to support urban transportation research.

Objects Detection Android Application, Lehigh University, Bethlehem, PA Sep 2024 - Dec 2024

- Developed an Object Detection Android App for Mobile Device.
- Implemented both mobile inference and cloud inference with YoloV5 model.

AI Maze Game Project, Lehigh University, Bethlehem, PA Sep 2024 - Dec 2024

- Developed a turn-based maze game as the platform.
- Used Monte Carlo Tree Search for simulating long-term strategies and evaluating potential moves.
- Applied Deep Q-Network for self-learning through AI self-play, improving strategy over time.

Travel Time Estimator, Lehigh University, Bethlehem, PA Jan 2024 - May 2024

- Built and trained a neural network model to estimate travel times based on historical data in San Francisco.
- Implemented data preprocessing techniques and utilized MSE loss function and Adam optimizer.

Self Navigated 3D printed Drone, Lehigh University, Bethlehem, PA Jan 2024 - May 2024

- Designed and 3D printed a single-axis dual-rotor drone using AutoDesk and Arduino.
- The drone was able to automatically detect targets, navigate routes, and control its height, direction, and speed.

Traffic Accident Pattern Analysis Project, Lehigh University, Bethlehem, PA Aug 2023 - Dec 2023

- Conducted a comprehensive analysis of traffic accident severity with data in the United States (2016-2023)
- Processed, standardized and cleaned the dataset and engineered features with PySpark.
- Built and trained a Random Forest Model to evaluate complex patterns and relationships.

Publications

After Talking with 1,000 Personas: Learning Preference-Aligned Proactive Assistants From Large-Scale Persona Interactions Preprint (manuscript under revision)

Ziyi Xuan, *Yiwen Wu*, Zhaoyang Yan, Vinod Namboodiri, Yu Yang

Design and Evaluation of Generative Agent-based Platform for Human-Assistant Interaction Research: A Tale of 10 User Studies IMWUT '25

Ziyi Xuan, *Yiwen Wu*, Xu hai Xu, Vinod Namboodiri, Mooi Choo Chuah, Yu Yang

Shaping Smart Personal Assistants through Generative Interactive Environments for Scalable Design and Evaluation SEA@NeurIPS Workshop '25 (Oral Presentation)

Ziyi Xuan, *Yiwen Wu*, Vinod Namboodiri, Yu Yang

Demo Abstract: GIDEA: Generative AI-Powered Interactive Design and Evaluation Platform for Assistant Agent Research SenSys '25

Ziyi Xuan, *Yiwen Wu*, Yu Yang

Exploring human-centered design and usability testing of MathPal, a generative AI agent for math learning AECT '25 (Presentation)

Zilong Pan, *Yiwen Wu*, Adam Wax, Benjamin Rainey, Faatiha Kalam, Jolie Goldstein, Zilu Jiang, Chenglu Li

Skills

Languages & Frameworks: TypeScript, JavaScript, Python, Java, C/C++, Next.js, ReactJS, Node.js, Flask, SQL, Flutter

DevOps: AWS, Docker, GitHub Actions, CI/CD, Linux, Supabase, PostgreSQL, SQLite, Selenium, BeautifulSoup

Technologies: Linux, 3D print(AutoDesk Fusion), Hardware/embedded(Arduino, Raspberry Pi), Unity

AI tools: penAI API, Codex, Claude CLI, Multi-agent workflows, Git, Chrome Extension Development, REST APIs