

# Katherine Ma

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## EDUCATION

**Purdue University** West Lafayette, IN  
*Bachelor of Science in Computer Engineering, AI/ML Concentration* May 2027  
• Relevant Courses: C Programming, Modern Mechanics, Programming with Multimedia Objects GPA: 4.0/4.0

## PROFESSIONAL EXPERIENCE

**Aha AI (Edtech startup)** Remote  
*Project Management Intern* June 2023 - Jan 2025  
• Produced 70+ marketing media using GenAI software that allowed team to utilize over the span of 3 months  
• Analyzed and debugged 60+ released products before publishing to consumers to improve user experience  
• Spearheaded SEO content production project that attracted 1,300+ target audiences to follow on Instagram  
• Developed AI prompt engineering training course and workflow to train future internees and other employees

## RESEARCH EXPERIENCE

**Purdue University – West Lafayette** West Lafayette, IN  
*Undergraduate Researcher, Chemistry Isotope Computation* Jan 2025 - Present  
• Conducting computational research under Professor Greg Michalski using the Negishi supercomputer, developing R and Python scripts to preprocess, analyze, and visualize isotope concentration on 700+ data simulations

**Purdue University – West Lafayette** West Lafayette, IN  
*Undergraduate Researcher, Autonomous & Intelligent Multi-agent Systems (AIMS) Lab* Jan 2025 - Present  
• Synthesizing ideas from existing research on robotics data collection to develop and implement a more efficient and cost-efficient pipeline that automates data collection in pursuit of a general robotics foundation mode  
• Optimizing technology such as Grounded SAM2, OpenCV, and the Action Chunking Transformer (ACT) Model to enhance object detection and action segmentation, validating over 500 demonstration data points

## LEADERSHIP & INVOLVEMENT

**Machine Learning @ Purdue Accelerator Program (ML mentor program)** West Lafayette, IN  
*Founder & Director* Oct 2024 - Present  
• Spearheaded development of program with 25 AI/ML projects that culminate in a faculty-reviewed symposium  
• Recruited 10+ postgraduate students and professors to lead mentee groups and expand the program's reach  
• Organize and participate in technical workshops on varying deep learning frameworks using PyTorch

**Owl Learning (English and Python tutoring program)** Remote  
*Founder & President* Jan 2023 - Present  
• Overseeing inter-school exchange program that teaches English & Python programming to 70+ Taiwanese students  
• Recruited and managing 14 tutors and translators globally for conducting weekly educational lessons  
• Liaised participating schools and tutoring team to establish long-lasting relationships for three years so far

## PROJECTS

**Minecraft Simulation with AI Agents | LLMs, Python, Javascript** Present  
• Modeling a dynamic in-game economy to analyze emergent behaviors and explore novel RL-LLM integration  
• Conducting in-depth literature review of recent advancements in LLM reasoning and drawing on research to identify and implement frameworks that enhance dynamic decision-making within simulation environments  
**TravelHER | Groq API, Google OAuth, Google Calendar API, Firebase** Feb 2025  
• Developed personalized travel itinerary website for Purdue's InnovateHer hackathon, integrating chatbot and multiple APIs for secure authentication, dynamic calendar management, and real-time itinerary customization

## SKILLS & ACHIEVEMENTS

**Skills:** Python, Pandas, Java, JavaScript, React.js, C/C++, Arduino, SolidWorks, Adobe Creative Cloud

**Awards:** Best Speaker Award at First-Year Pitch Competition, 4x Gold President's Volunteer Service Award, The President's Award for Educational Excellence, 2<sup>nd</sup> Place at Eli Lilly Case Competition, Daniels School of Business Scholarship Recipient, Deans' List

**Languages:** English (native), Mandarin Chinese (fluent speaking, basic reading/writing), Spanish (intermediate)