

MIKE ZENG

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EDUCATION

University of Iowa - Iowa City, IA

Expected May 2026

Relevant Coursework: Data Structures, Algorithms, Operating Systems, Computer Networks, Software Engineering Masters Capstone I & II, Automata Theory, Compilers, Distributed Systems, High Performance Computing

RESEARCH

University of Iowa

Jan 2025 - May 2025

Incoming Network Systems Researcher [Professor Rishab Nithyanand CS:5990]

Iowa City, IA

UI Hydroinformatics Laboratory

Oct 2024 - Present

Interdisciplinary Researcher - Systems & Environmental Sciences [PI: Dr. Omer Mermer]

Iowa City, IA

- **Proposed a system** for reducing onsite visit costs by **100%** with a **web platform** predicting harmful algae blooms through **satellite data**.
- Devised a **JavaScript** filter in **Google Earth Engine** to process and analyze **2000+** satellite data points, leveraging **advanced data sorting and mathematical algorithms** to achieve **100% prediction accuracy**.
- Implemented a **streamlined download and export** to ArcGIS/QGIS through data packing into a **KML file extension**, hitting an **user efficiency increase** of **75%**.

ACTIVITIES

Advancing Towards Human Recreation Lab

Feb 2023 - Present

Lead Researcher

Iowa City, IA

- Designed a **SOTA retrieval structure** for LLMs using **Python**, improving personalized memory recall compared to current RAG systems by **50%**.
- Constructed a **reinforcement judgement system** for personification & guardrails of LLMs using **Gemini API** to obtain a **66%** reduction in erroneous LLM output.
- Engineered a **real-time model** for LLM interactions in a concurrent space to obtain a **82% response rate** from a stream of events, utilizing **concurrency threads** and **scheduling queues**.

Homelab

Jul 2022 - Present

System Admin

Iowa City, IA

- **Architected and administered** a high-performance computing (HPC) cluster to optimize server hosting and compute services to reduced compute costs by **75%** using **efficient system design**.
- **Debugged and monitored** Proxmox, NGINX, Linux, and Pi-hole alongside consumer applications like Gitlab to achieve a service level objective of **95%** for all end-users through effective utilization of **iDRAC and SSH/BASH**.

PROJECTS

Shards of the Grid

- Led a team of **5 students** to develop a **SaaS web game** using **Ruby on Rails** and **Javascript** on **Heroku** to achieve a peak of **50+ players**.
- Established TDD tests to achieve a **code coverage of 95%** percent using **Cucumber** and **RSpec**, arranging **Github Actions** as CI/CD.
- **Represented** engineering team during weekly customer meetings, achieving **100% customer satisfaction** using Figma, Github Issues & Wiki for feature communication.

Page Processor

- Deployed a **page-based word processor** for creating and managing any document that severely relies on paging using **FastAPI**, **PostgreSQL**, and **Javascript**, converting **10+** users from competing software.

SKILLS

Languages: Java, C/C++, C#, Python, JavaScript/TypeScript, Rust, HTML/CSS, Ruby, SQL, SAS

Frameworks: Svelte, React, Django, Rails, FastAPI, TailwindCSS/Bootstrap, TensorFlow, PyTorch

Technologies: AWS, GCP, Postgres, MySQL, Git, Linux, NGINX, Unreal Engine, Unity