ATHARVA KULKARNI

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EDUCATION

University of Michigan **Ann Arbor, MI**
B.S. in Honors Mathematics and Computer Science *Apr 2025*
Relevant Coursework: Programming Languages, Computer Vision, Advanced Linear Algebra, Theoretical Statistics
Present coursework: Computer Organization, Advanced Algorithms, Probability Theory, Financial Math, LoG(M)
GPA: 3.8/4.0
Honors & Awards: William J. Branstrom Freshman Prize–top 5% of first-year class

SKILLS

Programming Languages: Python, C, C++, Rust, Golang, Java, OCaml, JavaScript, HTML, CSS
Frameworks: Django, Flask, Express.js, React.js, Vue.js, Node.js
Databases: PostgreSQL, MySQL, MariaDB, MongoDB
Deployment: Git, GitHub, Docker, Kubernetes, OpenShift, Ansible, AWS, SDLC, Agile Methodologies
Soft Skills: Communication, Problem Solving, Time Management, Collaboration, Leadership

EXPERIENCE

University of Michigan Information and Technology Services **Ann Arbor, MI**
Software Development Intern Fellow *May 2023 - Aug 2023*
- Deployed Docker application for production on OpenShift v4 for application scaling and built an efficient CI/CD pipeline
- Constructed AJAX handler to fetch data from Splunk using its API, reducing wait time by over 75%
- Enhanced front-end design by producing custom template tags to ease viewing of multiple data items in a table's column.
- Refactored current application in Golang to use Zerolog and added an option to write structured logs directly to journald
- Guided and onboarded two interns for ongoing projects, effectively communicating and resolving their issues.
- Provided mentorship to nearly 50 interns and presented insightful topics on AI, effective leadership, and career growth

University of Michigan Information and Technology Services **Ann Arbor, MI**
Software Development Intern *May 2022 - Apr 2023*
- Implemented custom plugins tailored to network administrators' requirements, combining legacy software functionalities
- Streamlined and organized internal application's user interface to facilitate network configuration processes
- Published Ansible playbooks to deploy and configure Nginx as a reverse proxy for application scaling and load balancing

Hiroshima University BMK Digital Cognitive Neuroscience Lab **Tokyo, Japan**
Intern *May 2021 - Aug 2021*
- Delivered full-stack website using Django that reads and charts multiple real-time data streams from various EEG headsets
- Enabled backend wireless connection between hosted environment on RasPi and EEG headsets to receive brain signals
- Initiated efforts to improve website navigation and enhance user interface, focusing on user-friendliness and accessibility.

PROJECTS

ML for Identity Matching
- Researched various machine learning models to improve identity matching in the University's records system
- Utilized a research paper on the Hierarchical Naive Bayes model and executed an unsupervised prototype implementation.
- Created and processed sensitive datasets for model training, ensuring compliance with security standards
- Thoroughly documented processes for future developers to use labeled data for improved supervised model development

Traffic Sign Recognition
- Conducted thorough research and surveys on computer vision techniques for the detection and recognition of traffic signs.
- Managed the efficient processing of a dataset comprising over 50,000 images, ensuring optimal performance and accuracy.
- Implemented a DCT to transition to the frequency domain to increase the speed of recognition of traffic signs
- Deployed neural network models to analyze and compare outcomes for both spatial and frequency domain

Intern Weekly Reflections
- Created a Flask website and designed API to enable reading, updating, and deleting data from Google Sheets
- Identified and communicated potential risks and solutions with stakeholders, including the internship planning team
- Spearheaded continuous delivery of working software under agile development and followed DevOps practices

WorkPlus
- A dynamic web application using Django to manage a user's group tasks, projects, and file sharing
- Incorporated an interactive real-time chat system utilizing Django WebSockets and Channels for seamless communication.
- Utilized Tesseract to read number of kilometers and date from user-uploaded image to verify running challenge completion
- Integrated the Fitbit API to track a user's personal and team fitness levels and engage in daily trivia challenges