Harshitha Puttaswamy

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Dynamic and results-driven Computer Science graduate student with expertise in software development, full-stack design, CI/CD pipelines, and machine learning. Experienced in developing scalable solutions using frameworks like MERN, Django, and NextJS, with interests in reinforcement learning and cloud technologies. Demonstrates leadership in projects, performance optimization, and collaboration in fast-paced environments.

EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Master of Science in Computer Science   *December 2024*
Relevant Coursework: High Performance Computing, Intro to Deep Learning, Design and Analysis of Computational Algorithms, Operating Systems, Computer Architecture, Science of Cyber Security

TECHNICAL SKILLS

Programming Languages and DB: C, Python, Java, JavaScript, TypeScript, MongoDB, PostgreSQL, MYSQL, Firebase
Frameworks and Software's: Linux, Kubernetes, TensorFlow, Keras, Pytorch, Pandas, NumPy, TCP/IP, Cloud computing, AWS, ExpressJS, ReactJS, NodeJS (MERN Stack), Django, CI/CD, Pytest, LLM, Git, Jupyter Notebook, Google Collab,

PROJECT EXPERIENCE

Splitwiser – A Splitwise clone | Full Stack Development, LLM   *June 2024 - Present*
- Created a Splitwise - inspired application featuring receipt scanning via camera or file upload, group and non-group expense tracking, and dynamic graphical and manual split functionalities.
- Leveraged Google Gemini API to convert receipt images into JSON data, facilitating graphical expense visualization.
- Utilized NextJS for UI and API development, Google Firebase for backend services, and Firestore for storing receipt data.

Iterative voting for committee selection with Multi-Arm Bandits | RL and CSC Research   *June 2024 – December 2024*
- Developed a systematic framework for simulating iterative voting setting.
- Modeled voters as agents in an MAB setup, where candidates represent arms.
- Designed reward structures that align with voter utilities and preference satisfaction, enabling effective comparisons of strategies.

Design and Implementation of Instruction Pipeline of Processors | Computer Architecture   *January 2023 - May 2023*
- Planned and executed a superscalar, out-of-order pipeline simulator in C with 12 stages including fetch, decode, instruction analysis, renaming, execution, and retirement, supporting 19 instruction types.
- Integrated Branch Table Buffer (BTB) and branch prediction mechanisms to reduce pipeline stalls by 50%.
- Implemented advanced out-of-order processing, including instruction renaming, and dependency analysis

Autokube | Startup Project   *August 2021 - March 2022*
- Led the development of the web application for automating Kubernetes cluster creation and modification.
- Utilized MongoDB, Express.js, React, Node.js (MERN) stack for comprehensive application development and cutting cluster setup time by 50%.
- Formulated APIs tozed initiate scripts, triggering a series of workflows for managing the backend Kubernetes clusters.

PROFESSIONAL EXPERIENCE

Fyle Technologies Ltd, *Backend Developer Intern* | Bangalore, India   *March 2022 - December 2022*
- Developed APIs using Django, Angular, and PostgreSQL (PSQL), contributing to 8 new features, improving market appeal.
- Streamlined PSQL migrations by adding fields and seamless frontend-backend integration, enhancing user experience.
- Added Unit and Integration tests with Pytest, achieving 98%+ test coverage across backend repositories.
- Introduced GitHub Actions for Continuous Integration, reducing review time by 50% and improving code quality.
- Automated pull request merging and optimized deployment pipelines, boosting scalability and performance by 5%.

CERFICATIONS

Reinforcement Learning, Deep Learning Part 1 - IIT Madras (NPTEL). Completed the course with an Elite Certificate
CNN in TensorFlow, Neural Networks and Deep Learning, Machine Learning - DeepLearning.AI
Yes!+ workshop - Art of Living workshop for personality development for youth.

PUBLICATIONS

- Vivek Kuchibhotla., P Harshitha., Shobhit Goyal (2020). An N-step Look Ahead Algorithm Using Mixed (On and Off) Policy Reinforcement Learning. IEEE, https://doi.org/10.1109/ICISS49785.2020.9315959
- Vivek Kuchibhotla., P Harshitha., Divitha Elugoti (2020)., Combinatorial sleeping bandits with fairness constraints and long-term non-availability of arms. IEEE, https://doi.org/10.1109/ICECA49313.2020.9297371