Vishal Ravichandran

+91-7338885652 vishal8@illinois.edu linkedin.com/in/vishal1101 github.com/Vishal-011

Education

University of Illinois Urbana-Champaign **Aug. 2024 (Expected)**
Masters of Computer Science *Champaign, Illinois*

Anna University **Aug. 2018 – Apr. 2022**
B.E.(Honours) in Computer Science; Cumulative GPA: 8.72/10.00 *Chennai, India*

Relevant Coursework

- Data Structures (A)
- Computer Networks (A)
- Database Management (A)
- Advanced Algorithms (A)
- Unix Internals (A)
- Machine Learning (A)
- Java Programming (A+)
- Automata Theory (A)
- Linear Algebra (A+)

Technical Skills

Languages: Java, Python, JavaScript, PHP, C++, SQL, HTML/CSS, Shell
Databases: SQL(MySQL, Oracle), NoSQL (MongoDB, GrqphQL, Firebase, Redis)
Frameworks/Libraries: React, Angular, Node, SpringBoot, RabbitMQ
Tools: Git, Docker, Figma, Apachet Tomcat, Nginx, Unix, Bash

Experience

Walmart **Aug. 2022 – Present**
Software Developer II *India*

Sparky: Voice Assistant for Walmart | *Java, SpringBoot, GraphQL, Redis*
- Spearheaded the development of a voice assistant from inception, revolutionizing shopping experiences for millions of customers using Java and SpringBoot.
- Ensured the codebase's integrity by implementing rigorous automated testing, resulting in a vulnerability-free product.
- Reduced customer shopping time by 30%, driving a significant improvement in overall user satisfaction and retention.

Conversational AI Platform | *Java, SpringBoot, Kafka, Redis, Google BigQuery*
- Contributed significantly to the Converse team's efforts in managing various text artificial intelligence applications, such as customer care bot and spark driver bot.
- Implemented a multi-cluster architecture with global load balancing to ensure robustness and scalability.
- Facilitated Walmart in developing customer care bot and spark bot, resulting in a cost reduction of $800 thousand through enhanced automation and efficiency.

Unified Chat | *Javascript, ReactJs, NextJs, Node, WebSocket*
- Engineered a scalable Chat library utilizing React.js and Next.js, enabling seamless integration across all teams within the Walmart ecosystem.
- Implemented robust architecture to ensure reliability and scalability, facilitating easy adoption by various teams.
- Empowered teams with efficient chat functionality, enhancing collaboration and communication across the organization.

Accolite **May. 2021 – Jun. 2021**
Software Engineering Intern *India*
- Improved loading time of client website by 25% by identifying 12 bugs.
- Created over 400 automation test scripts using Jherkin language.
- Created customized Selenium frameworks to run the scripts & identify bugs.

Academic Projects

Skill Assessment Platform | *Python, Bert, Flask, Angular* **Nov. 2020 – Mar. 2021**
- Developed a Skill Assessment Platform aimed at determining individuals' core competencies through progressive difficulty questions.
- Enabled organizations to contribute their own questions, which were classified into various skill categories based on the BERT model, enhancing customization and adaptability of the platform.
- Utilized both multiple-choice and descriptive questions, with descriptive responses graded using a specialized BERT and Hugging Face model for precise evaluation.

Enhanced Decison Making for Autonomous Vehicles | *Python, Django, TensorFlow* **September 2021**
- Created an intelligent decision-making bot for autonomous vehicles, utilizing DDPG and DDQN algorithms, resulting in collision avoidance and a 27% improvement in fuel efficiency.
- Implemented complex scenario simulations in Python to train the bot, achieving a failure probability of less than 12%.
- Enhanced the autonomous vehicle's flying time by maintaining precise altitude control, ensuring safer operations and extended flight time.

Research Experience

Next Generation Networks Laboratory **May. 2019 – Oct. 2022**

Research Assistant *Anna University*

- Collaborated with **Prof Gunasekaran Raja** in research initiatives in autonomous vehicles
- Enhanced network security through the implementation of multi-layered blockchain technology.
- Pioneered an energy-efficient 6G Federated Learning-enabled UAV deployment scheme to optimize performance and resource utilization.

Publications

1. G. Raja, S. B, **Ravichandran, Vishal**, *et al.*, "Ai-empowered uav trajectory optimization in 6g aerial networks," in *GLOBECOM 2023 - 2023 IEEE Global Communications Conference*, 2023, pp. 7285–7290. DOI: 10.1109/GLOBECOM54140.2023.10436836.

2. G. Raja, S. G. Senthivel, S. Balaganesh, B. R. Rajakumar, **Ravichandran, Vishal**, and M. Guizani, "Mlb-iod: Multi layered blockchain assisted 6g internet of drones ecosystem," *IEEE Transactions on Vehicular Technology*, vol. 72, no. 2, pp. 2511–2520, 2023. DOI: 10.1109/TVT.2022.3213567.

3. K. Raja, K. Kottursamy, **Ravichandran, Vishal**, *et al.*, "An efficient 6g federated learning-enabled energy-efficient scheme for uav deployment," *IEEE Transactions on Vehicular Technology*, pp. 1–10, 2024. DOI: 10.1109/TVT.2024.3390226.