Shivaram Kumar Jagannathan

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EDUCATION

Manipal Institute of Technology   **Sep. 2022 – Sep. 2026**
Bachelor of Technology in Information Technology, Minor in Computational Intelligence   *Bengaluru, KA*
Relevant Coursework: Computer Networks, Operating Systems, Machine Learning, Artificial Intelligence,
Distributed Database Systems, Digital System Design
GPA: 3.3

EXPERIENCE

Semi-Finalist @ eYRC Robotics Competition   **Nov. 2024 – Present**
eYRC, Indian Institute of Technology Bombay   *Bombay, MA*
- Lead a team of 4 to develop a Logistics CoBot for warehouse robotics.
- Qualified for semi-finals placing ourselves in the top 30 teams amongst 3000+ teams internationally.
- Used SLAM and Nav2 navigation stack for autonomous navigation within warehouse using ROS.
- Implemented controls with forward kinematics for the UR5 Robotic Arm for motion planning.
- Setup Extended Kalman Filters and Monte-Carlo Localization for particle filter based SLAM and achieved 98% accuracy.
- Integrated ArUco marker detection on Packages with UR5 for Pick-and-Place warehousing.
- Tools: Nav2 Commander API, ROS2 Humble, SLAM, Gazebo, OpenCV

Data Engineer Intern   **July 2023 – Aug. 2023**
Exponent Energy   *Bengaluru, KA*
- Bootstrapped a Kubernetes backend for Charging Infrastructure using AWS EKS reducing overhead by 30%.
- Designed Apache Superset dashboards to analyze EV charging metrics for 50+ stakeholders.
- Authored documentation and managed version control using GitHub for a team of 20+ engineers.
- Deployed a cloud-based charging station locator, improved user engagement by 25%.

Embedded Systems Engineer Intern   **June 2023 – July 2023**
Exponent Energy   *Bengaluru, KA*
- Integrated a communication protocol for MCU subsystems within EV charging networks, improving operational efficiency and reliability at the CAN layer.
- Implemented an Error Detection and Immediate Response Agent to identify and rectify ECU failures, optimizing charging metrics by 20%.

PROJECTS

AI Tax Assistant | *Python, LangChain, Docker, Neo4j, Docker*   **Feb. 2023 – Feb. 2023**
- Conceptualized a Retrieval Augmented Generation based LLM for Indian Tax Information.
- The application was containerized in Docker and the data was stored in Neo4j graph database.
- Tokenization of the tax information to was done through a Gemini based pipeline.

Reverse Dictionary | *Django, Python, Tensorflow, Bootstrap CSS, Git*   **May 2020 – July 2020**
- Developed a website for searching words based on descriptive phrases using an LSTM sequence model.
- Trained the model on over 250,000 unique English words, predicting top 10 words based on user descriptions.
- Technologies: LSTM, Keras, Word2vec embeddings, nltk, TensorFlow.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, PostgreSQL, JavaScript, HTML, CSS
Frameworks: Node.js, Flask, Django, FastAPI, ROS, SLAM, Nav2
Developer Tools: Git, Docker, VS Code, AWS, Athena, EKS, ECS
Libraries: pandas, NumPy, Matplotlib, TensorFlow, PyTorch