Sai Tarun Sirapurapu

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Objective

Recent Computer Science graduate actively pursuing roles in software engineering and data science. I bring hands-on experience with Java, Python, React, and Deep Learning, and a strong focus on building scalable backend systems, intuitive user interfaces, and data-driven solutions. My goal is to contribute to innovative, high-impact projects where I can combine software development with analytical thinking to solve real-world challenges.

Experience

- **CGI** *Oct 2020 - Dec 2022*
  Software Engineer Banglore, India
  - Led the development and implementation of a critical billing service extension for telecom systems, ensuring seamless integration of new services and maintaining billing accuracy for sub-member accounts.
  - Identified and resolved a significant security vulnerability during development, strengthening the billing system's integrity through collaborative problem-solving and effective code remediation.
  - Achieved 30% reduction in processing time through continuous code optimization and algorithm refinement, resulting in improved system performance and substantial cost savings while maintaining agile development practices.
  - Designed and implemented structured procedures using Java Spring and SQL, integrating with microservices (JDBC) to create a unified billing system that reduced operational overhead by 275 business hours.
  - Developed and integrated REST APIs for new microservices to meet evolving business requirements, collaborating with QA team for comprehensive SOAP UI testing.
  - Utilized Quarkus framework for cloud-native Java applications, facilitating efficient data migration and cloud deployment strategies.

Graduate Assistantship

- **Univesity of Dayton** *May 2023 - Dec 2024*
  - Assisted Prof. Mehdi Zargham in Deep Learning courses, providing guidance to students on neural networks and generative algorithms, and evaluating their assignments.
  - Designed and implemented challenging, innovative coursework each semester to push students' boundaries and foster continuous learning and improvement.
  - Maintained a growth mindset, leveraging the opportunity to work with Prof. Zargham for ongoing personal and professional development in the rapidly evolving field of Deep Learning.
  - Developed assignments for deep learning model implementations, demonstrating ability to apply theoretical concepts to practical, real-world scenarios.
  - Contributed to a dynamic academic environment, showcasing strong teamwork skills and the capacity to address complex challenges in AI and robotics.

Education

- **University of Dayton** *Dec 2024*
  MS in Computer Science 3.83 GPA Dayton, USA
- **Keshav Memorial Institute of Technology** *Sept 2020*
  B.Tech in Electronics and Communication Engineering Hyderabad, India

Projects

- **AI News Curator**
  Tools: Java, Spring Boot, React, Tailwind CSS, Docker, REST APIs, Maven [ ]
  - Built a full-stack application to deliver real-time personalized news.
  - Implemented article summarization and user preference customization.
  - Used AI models and cosine similarity to filter and rank news based on relevance.
  - Containerized the backend with Docker and currently deploying to the cloud.

- **Real Estate Analysis**
  Tools: Python, Flask, React, AWS, Nginx, Linear Regression, Pandas, Scikit-learn [GitHub]
  - reprocessed and cleaned Bangalore housing data, handling missing values and feature engineering.
  - Implemented Linear Regression for price prediction and pickled the trained model for deployment.
  - Developed server and utility files in Python (Flask API) for backend processing.
  - Built a React-based frontend for user interaction and real-time predictions.
  - Deployed the full-stack application on AWS using FileZilla and Nginx web server for hosting
- **Real-Time Robotic Object Detection System**
  Tools: Robot Operating System 2, Python, Docker, OpenCV, You Only Look Once v8, Ubuntu, Hugging face and Deep java library.
  - Developed a system integrating ROS2 and YOLO for detecting and classifying Mars rocks.
  - Designed three ROS2 nodes for camera input, YOLO-based detection, and Turtlesim-based movement.
  - Enabled real-time object processing with support for multi-camera inputs.
  - Coordinated robotic actions based on detection results in a simulated environment.

Please refer to my GitHub for rest of my projects

SKILLS

- **Programming Languages:**

  Backend: Java (Spring Boot), Python
  Frontend: JavaScript, React.js
  Database: MySQL, Postgres SQL
  Additional: C++, C#, MATLAB

- **Deep Learning & Computer Vision**

  Frameworks: TensorFlow, Keras, Pytorch, Scikit-learn, OpenCV
  Models: Neural Networks, Generative Adversarial Networks (GAN), Variable Auto Encoder (VAE), Denoising Diffusion Probabilistic Models (DDPM)
  Specialized in Single Shot Detector (SSD) MobileNet V2 optimization and deployment.

- **Development Tools & Technologies**

  Version Control: Git, GitHub
  Containerization: Docker
  Operating Systems: Linux
  Data Visualization: Tableau, MATLAB, Python libraries
  Cloud Platforms: Experience with cloud deployment and microservices on AWS