Keshav Shivkumar

US Citizen

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PROFESSIONAL EXPERIENCE

Teaching Assistant, Rutgers University, Piscataway, NJ, USA   **January 2023 - Present**

- TA for CS-170, Computer Applications for Business, which involves teaching basic concepts in HTML, CSS, JavaScript, pseudocode, MS Excel, and databases.
- TA for CS-210, Data Management for Data Science, which includes teaching Python concepts including important Python libraries like pandas, matplotlib, numpy, and SQL concepts including working with CSV, JSON, NoSQL, etc.

Software Engineer Intern , Bloom Energy, Bangalore, India   **September 2021 – March 2022**

- Engineered a ReactJS and Flask-based single-page web application (SPA) for Bloom Energy's manufacturing portal, integrating a bespoke test case management interface that facilitated on-demand interaction with Selenium test suites, resulting in an 80% increase in testing throughput and efficiency within an Agile Scrum framework.
- Implemented and configured a sophisticated Jenkins CI/CD pipeline, seamlessly integrated with GitLab, to automate the selection and execution of test cases, enhancing the workflow by enabling continuous integration and deployment.
- Architected a novel proof-of-concept for a Jenkins-Gitlab CI/CD workflow, employing advanced bash scripting to invoke selective test execution, thereby optimizing testing cycles and accelerating the delivery of new features and updates.
- Catalogued custom Grafana dashboards to visualize and analyze test execution results and performance metrics in real-time, providing actionable insights that drove further optimization of the testing process and improved the decision-making capabilities of the development team.

EDUCATION

- **Master of Science (MS), Computer Science, 2024 | Rutgers University, New Brunswick, NJ, USA**
  CGPA: 3.90/4.00
  Relevant Coursework: Introduction to AI, Mathematical Foundations of Math Science, Machine Learning I, Machine Learning II, Computer Vision, Database Systems for Data Science, Database Management Systems, Software Engineering I

TECHNICAL PROFICIENCIES

Programming Languages:	Python, Java, C++, R
Web Development & Frameworks:	HTML, CSS, JavaScript, NodeJS, Django, ReactJS, Flask, JSP
Data Science & Machine Learning:	Pandas, Matplotlib, PyTorch, NumPy, SQL
Additional Skills:	Git, Linux, AWS, Agile and Scrum Methodologies, CI/CD Practices

PROJECTS

- **RUEats** [Technologies used: HTML, CSS, JavaScript, NodeJS, SQL]
  Spearheaded the end-to-end development of a food delivery application, emulating a professional software engineering team's workflow. Initiated with a comprehensive project blueprint and architectural diagrams, progressed to backend deployment on AWS, API development, and culminated in frontend design.
- **ViLT: Vision-and-Language Transformer** [Technologies used: Python (PyTorch, OpenCV)]
  Independently adapted the ICML 2021 conference paper concept, ViLT, a streamlined Vision-and-Language Pre-training model, for enhanced visual reasoning on a novel dataset (GQA), and refined this convolution-free, Transformer-based architecture, demonstrating its potential in complex vision-and-language tasks.
- **Shopfinity** [Technologies used: Java, MySQL, JSP, JDBC, HTML, CSS, JavaScript]
  Engineered a dynamic vehicle auctioning web application with Java and MySQL. This platform enables users to create vehicle listings and engage in bidding with an innovative automatic bidding system.
- **Cloud-Based Skin Cancer Detection Application** [Technologies used: Java, Python (TensorFlow, Keras), AWS]
  Created a DenseNet CNN model trained using AWS SageMaker on the HAM10000 dataset stored on AWS S3 that classifies images of skin lesions and deploys it to AWS using API Gateway, with an Android application interface to allow users to upload a skin lesion image. Published a research paper at an IEEE conference for the same.