Usha Vudatha

Stony Brook, NY (Open to Relocate)

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Education

Master of Science in Computer Science, *SUNY - Stony Brook University; GPA: 3.8/4.0* *Jan 2022 - May 2023*

Bachelor of Technology in Computer Science, *Vel Tech University; GPA: 4.0/4.0* *Jul 2017 - Jun 2021*

Technical Skills/Strengths

Programming Languages: Python, Java, HTML, CSS, C, C++, Javascript, Go basics, D3.js, Flask
Databases: MySQL, GraphQL, SQL, NoSQL, Postgres, SQL Server, PL/SQL, MongoDB
Tools: Azure, AWS, Docker, Kubernetes, Ansible, IntelliJ, Visual Studio, Github, Jira, Jenkins (CI/CD), Postman
Frameworks: Spring Boot, Spring MVC, Hibernate, RESTful API, JSON, Micro-Services Architecture, Apache Kafka
ML/AI: NumPy, Pandas, Matplotlib, Scikit, Tensorflow, Keras, NLTK, Regression models
Courses: Computer Networks, Object Oriented Design, Database Systems, Operating Systems(Windows, Linux), Machine Learning

Experience

Graduate Research Assistant, *Stony Brook University, Stony Brook, NY* *Jul 2023 - Present*

- Built a Dashboard, which tracks different metrics of multiple University Research Projects by writing scripts to fetch the data, preprocess and show visualizations, achieving a 30% reduction in the decision-making time of the department
- Designed, implemented and maintained Database (SQL) schema using Microsoft Access as a Database Analyst for Stony Brook Hospital which eased the administration of the out-patient department having more than 1000 employees

Graduate Teaching Assistant, *Stony Brook University, Stony Brook, NY* *Aug 2022 - Dec 2022*

- Conducted collaboration & interactive sessions for 150 students, fostering their programming skill in Data Structures and Algorithms
- Mentored various teams, facilitating the development of their problem-solving skills and achieving 95% satisfaction rate
- Maintained a dedicated website with research materials and resources, catered to both technical and non-technical audiences

Software Engineer, *Sperry Technologies, Hyderabad, IN* *Jan 2021 - Dec 2021*

- Contributed to the enhancement of client's website back-end, spearheading the creation of 15+ RESTful microservices in a scalable high throughput workflow using Spring Boot and Hibernate to seamlessly map objects to relational database tables(MySQL)
- Optimized the existing code base, restructured it to reduce the average response time by 75% while enhancing database performance and loading speed by 25% through strategic query optimization and refining Spring Boot configuration
- Demonstrated strong version control practices using Git, resulting in 50% reduction in code conflicts, ensuring code integrity
- Incorporated Daily Scrum meeting as a part of Agile development, optimized & resolved 50+ critical bugs identified during testing

Software Engineer Intern, *Sperry Technologies, Hyderabad, IN* *Aug 2020 - Jan 2021*

- Created a movie rating website with seamless intercommunication between 3 microservices (2 producers, 1 consumer)
- Established smooth data exchange between the 3 microservices via RESTful APIs, enabling users to rate and review movies
- Configured the content by implementing Java-based release-capable Adobe Experience Manager components, templates, and dialogs
- Devised testing plans and protocols for assigned portion of code; identified, logged, and debugged 30+ issues

Publications/Accomplishments

- Published *Aspect Based Sentiment Analysis Using Rule Based Approach* in 2021 First International Conference on Advances in Computing and Future Communication Technologies. The findings were disruptive technology for the social media monitoring
- Published *Linear Attribute Distribution and Performance Assessment for Absenteeism at Work using Machine Learning* in 2019 International Journal of Recent Technology and Engineering. The findings led to the optimization of workforce management
- Recognized as a top performer in the HackWithINFY'20 Coding Competition [Hackathon] among 167,000 participants
- Earned a $7625 financial aid award in February 2023 for exceptional academic performance.

Projects

DNS resolver with DNSSEC

- Expertly navigated complex computer network to create DNS Resolver using dnspython resulted in 30% faster response. User device repetitively queries returned IP address starting at the root to the corresponding name server using UDP requests, key management
- Demonstrated innovative use cases by implementing added-security to DNS(DNSSEC) with public-private key (PKI) encryption techniques using ZSK, KSK, RRSET, resulting in a 99.9% successful validation rate of signed DNS queries

Aspect Based Sentiment Analysis

- Revolutionized the performance and scalability of complex application by integrating PyYAML files for efficient sentiment prediction improving the accuracy from 60% to 92%. Architected and implemented NLP model using python libraries nltk, PyYAML
- Initiated thorough code reviews, debugging, unit test and troubleshooting efforts with the use of tools such as JIRA and Git, resulting in continuous integration and system stability, enhanced user experience and customer satisfaction
- Deployed a sentiment analysis model with an F1-score of 0.92 using Flask and Docker(Containerization) in a production environment
- Employed Test-Driven Development (TDD) approach, including debugging, contributing to a 40% reduction in post-release defects

Kaggle DataScience and Machine Learning Survey

- Utilized RESTful API for streamlined data retrieval & responsive web dashboard, achieving a 90% reduction in manual tasks
- Built an interactive dashboard with advanced visualization techniques on kaggle survey data using D3.js and Flask
- Integrated the front end with interactive (UI/UX) elements to understand and retrieve different insights from data within 50ms

Asynchronous Queuing System

- Designed and implemented an in-kernel system that employs Linux workqueues and IOCTLs for concurrently handling submission, deletion, and reprioritization of user jobs and polling job statuses.
- Improved the bulk operation performance by 25% over synchronous operation execution

CertificationS

- Oracle Certified Associate, Java SE 8 Programmer*
- AWS Certified Solutions Architect - Associate*