Sai Narasimha Vayilati

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EDUCATION

New York University - GPA: 4.0/4.0	Sep 2022 – May 2024
Master of Science in Computer Engineering	*Brooklyn, NY*
KL University - GPA: 3.88/4.0	Aug 2016 – May 2020
Bachelor of Technology in Computer Science	*AP, India*

TECHNICAL SKILLS

Languages: C#, Java, C++, Python, HTML/CSS, JavaScript, SQL
Developer Tools: Kafka, Redis, Saas Cloud, PostgreSQL, Ant, Tomcat, Nginx, Jmeter
Technologies/Frameworks: Linux, .NET, GitHub, SpringBoot, Mickey FW, AWS
Relevant Courses: Artificial Neural Networks, Sequence Models, Structuring ML projects, Cloud Computing, Human Machine Interaction, Python Programming, Data Structures and Algorithms, Object-Oriented Programming, Principles of Database Systems, Machine Learning, Deep Learning, Big Data, Information Visualization, Systems Engineering

EXPERIENCE

Research Assistant - New York University — Aug 2023 - Present
- Analyze experimental data using statistical methods and data visualization techniques to extract meaningful insights. Collaborate with researchers from diverse backgrounds to design and implement software solutions tailored to specific research needs.
- Leveraged Auctus, an open-source dataset search engine and data augmentation platform, to optimize data accessibility and usability, thereby contributing to the advancement of data-driven research initiatives at New York University's ViDA lab.
- Extended Auctus search engine to enable complex SQL queries over Parquet files in S3-compatible storage, optimizing storage by 60% (Parquet: 5.2MB, CSV: 47MB) and query execution by 239.13% (Parquet: 0.23s, CSV: 0.78s).

Software Development Engineer - Zoho Corporation — Jul 2020 - Jul 2022
- Proposed and implemented solutions that significantly improved the overall scalability of Endpoint Central, a cloud-based UEM solution for endpoint monitoring, management, and troubleshooting. My work resulted in a 50% reduction in response time for endpoint issues and a 30% increase in the number of endpoints that could be managed simultaneously.
- Introducing load balancer & rate limiters for TCP IP flow in the network, and application flow results in scalability improvement by 4 times.
- Knowledge expert and specialized in query optimization, schema redesign, and database performance tuning. Created a MetaQuery framework to optimize SQL query and performance was elevated by 80%
- Built and integrated performance analyzer tool to monitor SQL traffic, system load, slowest queries, duplicate queries, and identify anomalies.

Software Developer Intern - Zoho Corporation — Jan 2020 - Jun 2020
- Worked as a java full stack developer and introduced features for Desktop Central which is a unified endpoint management and security solution that helps in managing servers, laptops, desktops, and smartphones from a central location.
- Designed, tested, and maintained SpringBoot REST APIs at the core of a Unified Endpoint Management and Security Solution, ensuring peak performance and robust security measures.

Software Developer Intern - CDK Global — May 2019 - Dec 2019
- Automated auditing process for computerized vehicle registrations where workload reduces from an eight-step manual process to a three-step automated process using C#, ASP.NET, and MSSQL database.
- Developed Restful APIs to perform CRUD Operations on MSSQL database using spring-boot and the ability to handle user requests with an average response time of less than 72 milliseconds

PROJECTS

Transfer Learning for Enhanced Brain Lesion Segmentation | *Python, TensorFlow, NIfTI, U-Net, DeepLabV3* — Dec 2023
- Spearheaded research on ischemic stroke lesion segmentation using U-Net and DeepLabV3 models, yielding significant enhancements with U-Net: a 95.46% Dice Score increase and a 47.18% Sensitivity enhancement on training data, along with a 31.62% Dice Score increase and a 40.89% Sensitivity enhancement on validation data.
- Developed and implemented modified U-Net architecture, achieving a Dice Score of 0.8823, Sensitivity of 0.8554, Specificity of 99.60%, and Accuracy of 97.77%, advancing medical image analysis and potential clinical integration.

Interpretable AI for Language Model | *Python, PyTorch, BERT, SHAP, LIME* — May 2023
- Implemented and employed SHAP with 500 steps, noted LIME discrepancies, and Captum interpretability methods on a BERT-based news classification model. Achieved consistent prediction probabilities (0.54) while highlighting feature importance. Addressed interpretability concerns, enhancing model transparency for informed decision-making.
- Used Python libraries for tokenization, embedding, and prediction, alongside visualization tools for model understanding.

Dynamic Mobility Management System | *Java Spring Boot, PostgreSQL, RESTful APIs, Angular JS, AWS* — Dec 2022
- Engineered Spring Boot microservices with REST and Apache Kafka, facilitating dynamic communication between drivers and passengers. Achieved an average of 500 successful ride matches per hour, optimizing efficiency and reducing wait times.
- Managed AWS S3 buckets for storage and backup, implementing policies to ensure data security. Reduced data loss incidents by 60%.

HONORS AND AWARDS

- **Resource person** in the national wide webinar on "Advanced Open-Source Database-PostgreSQL". — Jun 2021
- **Asia Finalists (Top 5)** in the Global Modern Apps Hackathon — Oct 2019
- **Final Round Winner** of Data Structure workshop cum Championship organized by IIT Roorkee. — Apr 2017