

LALITH AVINASH DONKINA

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Software Engineer with expertise in scalable system design and cloud computing. Passionate about building high-performance, fault-tolerant applications using Java, Python, AWS, and microservices architecture. Experienced in backend development, system design, and data-intensive applications with a strong foundation in algorithms, databases, and cloud technologies.

EDUCATION

University of Maryland Baltimore County (UMBC)

Baltimore, MD

Master of Professional Studies in Data Science, CGPA: 3.9/4.0

August 2023 - May 2025

Coursework: Data Science, Data Management, Intro to Data Analytics and Machine Learning, Big Data Processing, Leadership in Data Science, Ethical & Legal Issues in Data Science, Active Cyber Defence, and Generative AI for Interactive Fiction.

JNTUH College Of Engineering Jagtial

Karimnagar, India

Bachelor of Technology in Computer Science and Engineering, CGPA: 3.7/4.0

August 2016 - May 2020

Coursework: Data Structures, Operating Systems, Database management systems, Design and analysis of algorithms, Data warehousing and Data mining, Introduction to Data Science, Artificial Intelligence, Machine Learning, and Deep Learning.

EXPERIENCE

Graduate Teaching Assistant, Health Information Technology Department

University of Maryland Baltimore County, MD, USA

February 2024 - Present

- Assisted graduate-level students in implementing data science solutions using Python, R, and data visualization libraries.
- Assumed responsibility for grading assignments, conducting comprehensive tutoring sessions, and leading classes in the professor's absence, ensuring continuity and quality of education.
- Assisted in curriculum development and student performance analysis for undergraduate and graduate courses.
- Conducted research-based assessments to improve course engagement and retention for diverse student populations.

Application Development Analyst, Accenture, Hyderabad, India

May 2021 - August 2023

Projects: Microsoft - Minecraft Web Development, TD Bank - New Web Content Management System

- Designed and developed full-stack web applications using Adobe Experience Manager, Java, Spring Boot, and React.
- Built scalable backend APIs handling thousands of requests per second, optimizing latency by 30%.
- Refactored monolithic services into microservices, improving maintainability and fault tolerance.
- Led the development and integration of SPA and multi-page web applications, focusing on robustness.
- Engineered 30 custom web components, enhanced code quality, with a code coverage of over 90%.
- Led data migration and automation efforts, improving efficiency in large-scale data handling.
- Conducted analytical research and prepared data-driven reports for business decision-making.

Machine Learning Engineer, Rapid Acceleration Partners, India

December 2019 - November 2020

Project: Machine Learning Applications Research and Development

- Developed data quality validation pipelines to detect anomalies in large datasets, improving data integrity by 25%.
- Designed and implemented data governance strategies for automated metadata tagging and data lineage tracking.
- Enhanced a classification model's accuracy by 20% through strategic data augmentation, substantially improving

model reliability for real-world applications.

- Created and trained a custom machine learning model to interpret and digitize handwritten forms, enabling efficient data processing and storage solutions.

PROJECTS

Air Quality Analysis Using Big Data Tools and Techniques

- Spearheaded a comprehensive project analysing air quality metrics such as PM2.5, PM10, NOx, and SO2 across multiple cities over the past decade using Apache Spark and HDFS.
- Designed a real-time data pipeline using Kafka and Spark Streaming to process air quality metrics across 1M+ records.
- Optimized Spark jobs by implementing partitioning, reducing execution time by 35%.
- Produced interactive dashboards and detailed reports elucidating air quality impacts, which supported strategic policymaking and public health initiatives.

yogAI - Cross-Platform Mobile App for Yoga

- Developed a Flutter-based yoga app with real-time pose estimation using TensorFlow.js.
- Integrated Posenet model for real-time body pose estimation, significantly enhancing users' yoga postures through immediate feedback and tailored guidance.
- Designed backend APIs using Django REST Framework, reducing API latency by 25%.

Drug Discovery through Deep Learning

- Led a pioneering initiative in computational drug discovery by generating 32,000 novel drug molecules using a generative RNN-LSTM model, demonstrating the potential for high-throughput drug screening.
- Implemented a parallelized neural network training system using PyTorch + AWS EC2 GPU instances.
- Deployed the model using AWS Lambda + API Gateway, enabling scalable predictions.
- Evaluated model performance and validated the feasibility of using deep learning for drug discovery in scenarios with limited data availability, paving the way for future research and application.

TECHNICAL SKILLS

Programming Languages: Python, Java, C, C++, C#, JavaScript, R, Dart

System Design: Distributed Systems, Microservices, RESTful APIs, Scalable Architecture

Algorithms & Data Structures: Dynamic Programming, Graph Algorithms, BFS/DFS, Trees, Heaps

Data Science & ML: TensorFlow, PyTorch, Scikit-learn, XGBoost, Hugging Face, LLaMA, GPT, LangChain

Big Data & Processing: Apache Spark, Hadoop, Kafka, Dask

Statistical Analysis & Education Research: Regression Analysis, Predictive Modeling, Data Visualization

Databases & Querying: PostgreSQL, MySQL, Microsoft SQL Server, GraphQL, MongoDB, Snowflake, AWS Redshift

Cloud & DevOps: AWS (Lambda, S3, EC2, DynamoDB), Kubernetes, CI/CD Pipelines

Testing & Automation: JUnit, pytest, Selenium, MLTest, Apache Airflow

Software & Tools: Git, GitLab, REST APIs, Postman, SpringBoot, Jupyter Notebooks

Other Skills: ETL Pipelines, Data Governance, Agile (Scrum, Kanban), CI/CD

ACHIEVEMENTS

- Graduated Assistant from the second semester and with an in-state tuition scholarship.
- Received the ACE Award from Accenture for outstanding performance in consecutive years, FY22 and FY23.
- Finalist in ZS Data Science Hackathon 2019 and Winner of Smart India Internal Hackathon 2020.
- Best Coordinator for the Toastmasters Club 2019.