Mohammed Asim

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Education

University of California, Davis — Davis, California
Master of Science in Computer Science — *Sept. 2022 – Jan. 2025*

Jamia Millia Islamia — New Delhi, India
Bachelor of Technology in Computer Science and Engineering — *Aug. 2018 – June 2022*

Experience

Graduate Student Researcher — July 2023 – October 2024
Alzheimer's Disease Research Center, UC Davis Health — *Davis, California*

- Spearheaded the development of a high-performance **Convolutional Neural Network (CNN)** for intracranial cavity segmentation from MRI scans, achieving a Dice Similarity Score of **0.988**, reducing manual segmentation time by **70%**.
- Designed and implemented **data preprocessing pipelines** for a dataset of over **20,000** MRI scans, improving segmentation performance across varied head orientations by **25%**.

Big Data and Machine Learning Teaching Assistant — March 2023 – June 2023
Graduate School of Management, University of California, Davis — *Davis, California*

- Orchestrated hands-on learning experiences for **70+** students in the Big Data Analytics and Machine Learning course, boosting average engagement and comprehension scores by **20%**.
- Graded and provided feedback on **150+** assignments to ensure students achieved an understanding of advanced data analysis and machine learning concepts.

Software Engineering Intern — June 2021 – July 2021
Airports Authority of India, New Delhi — *New Delhi, India*

- Developed a web-based application to streamline inventory management, reducing reliance on paperwork and improving data accuracy by **30%** across **4** departments.
- Presented weekly progress reports and conducted system functionality training sessions for **15+** stakeholders, enhancing cross-departmental communication efficiency by **20%**.

Publications

[1] "Predicting Next-Day Rainfall Using Machine Learning Techniques", **Springer**, 2024. Link

[2] "Prediction of concrete compressive strength using deep neural networks", **Taylor & Francis**, 2023. Link

[3] "Scour modeling using deep neural networks based on hyperparameter optimization", **Elsevier**, 2022. Link

Projects

Object Detection and Tracking System | *Python, TensorFlow, OpenCV, CUDA, Docker* — GitHub Link

- Developed a real-time object detection and tracking system using **deep learning algorithms**, deployed on cameras mounted on autonomous vehicles, processing **100+ frames per second (FPS)**.
- Utilized **YOLO** and **SSD** architectures and trained the model on the **80,000-image Microsoft COCO dataset**, optimizing for real-time performance and precision, achieving an accuracy of **98%**.

Intrusion Detection System | *Python, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn* — GitHub Link

- Developed a machine learning-based intrusion detection system using classification algorithms like **logistic regression**, **decision trees**, and **random forests**, achieving a detection accuracy of **95%** on a dataset of **125,000 network activity logs**.
- Engineered and preprocessed large cybersecurity datasets, reducing false positive rates by **20%** and optimizing feature selection for faster model training.

Technical Skills

Languages: C, C++, Python, Java, JavaScript, SQL, HTML/CSS, MATLAB
Frameworks: React.js, Angular, Node.js, MongoDB, Firebase, NextJS, Django, GraphQL, Spring
Tools & Cloud: AWS, Azure, Google Cloud Platform, Git, Docker, Kubernetes
Others: Machine Learning, Deep Learning, Artificial Intelligence, NLP, Statistics, Data Science, TensorFlow, PyTorch, Scikit-learn, MS Excel, Data Structures & Algorithms