

SHUBHAN MITAL

Email: shubhanmital@gmail.com | Phone: +1 (858) 214-7189 | GitHub: Shubhanflash22 | LinkedIn: Shubhan-Mital

RESEARCH AT YUANYUAN LAB, UNIVERSITY OF CALIFORNIA SAN DIEGO [[LAB WEBSITE](#)]

- Working on optimization of mobile battery storage for electric construction vehicle charging and grid resilience. [[Link](#)]
- Analyzing construction vehicle videos with minute-by-minute SOC data and designing a computer vision model to accurately map vehicle activity to energy consumption and estimate the energy required for each construction task per unit time.
- Developing AI-based optimization strategies that use the activity-to-SOC mapping to schedule battery charging/discharging, improving energy efficiency, reducing emissions, and enabling scalable deployment of mobile EV infrastructure.

EDUCATION

University of California, San Diego

Sept 2025 - June 2027

Master of Science (MS) in Electrical and Computer Engineering

Specialization: Machine Learning and Data Science

CGPA: 3.53 / 4.00

BITS Pilani

July 2019 - July 2024

Bachelor of Engineering (B.E.) in Electrical and Electronics Engineering

Master of Science (M.Sc.) in Mathematics

CGPA: 8.48 / 10.00

SKILLS

Programming Languages: Python, C++, ROS, Linux, C, Java, MATLAB, SQL

Frameworks and Libraries: Pandas, NumPy, Scikit-learn, Spring, TensorFlow, Keras, PyTorch, Hugging Face

AI/ML Techniques: Supervised and Unsupervised Learning, Computer Vision, Deep Learning, NLP, Predictive Modeling

Robotics and Embedded Systems: ROS2, OpenCV, Path Planning, Sensor Integration, Embedded C

Cloud and Tools: AWS (Lambda, S3, CloudFormation), Azure (Databricks, ADF, Functions), Git, Excel, PowerApps

Web Technologies: React, Tailwind-CSS, JavaScript, HTML, CSS, Node.js, REST APIs

EXPERIENCE

Piramal Pharma Ltd., Mumbai

Sept 2024 - Sept 2025

Data Scientist

- Engineered and deployed 4+ scalable automation solutions using Azure Databricks, ADF, Snowflake, and Azure Function Apps, boosting data processing pipelines efficiency by **60%** and reducing manual efforts in accrual consolidation.
- Integrated automated outputs into Qlik Sense dashboards, enhancing visibility & decision-making for **20+** business teams.
- Developed an ML-based forecasting tool to predict stock-out and expiry risks **24 months** in advance, using AWS and SAP data. This improved inventory visibility and enabled collaborative scenario-based planning across supply chain and finance.
- Automated pricing workflows and integrated chat bots, decreasing the turnaround time for key processes by **70%**.

Piramal Pharma Ltd., Mumbai

Jan 2024 - June 2024

Data Science Intern

- Led the development and deployment of strategic applications, including Profitability Report, E-core, and NPD Dashboard
- Delivered actionable financial insights across business units and streamlined decision-making processes and drove a **20%** improvement in operational efficiency through analytics-enabled reporting and dashboards.
- Automated price scrapers, self-ship trackers, & offtake reports for e-Commerce platforms to enhance operational workflows.
- Improved operational efficiency by **50%** and data accuracy by **90%** through above automation pipelines.

Amazon Development Centre, Bangalore

July 2023 - December 2023

Software Development Engineer Intern

- Developed and integrated ETL Fetcher and Validator tools into the user interface, enhancing the accuracy and efficiency of the ETL output validation process and supporting faster, more reliable data processing across multiple downstream pipelines.
- Prevented data discrepancies, mitigated financial losses of up to **\$5 million**, and improved overall operational resilience.
- Implemented continuous integration & delivery (CI/CD) for **2** critical pipelines by writing functional and integration tests.
- Improved team operational excellence metrics, resulting in a time savings of **15 hours per development cycle**.

PROJECTS

Autonomous Vehicle Perception and Navigation System - ROS2 and Python [[GitHub](#)]

- Built an autonomous navigation system combining YOLO-based perception and multi-sensor fusion on embedded platforms.
- Integrated GPS and LiDAR with PD control enabling closed-loop obstacle avoidance and precise stopping behavior.

Statistical Modeling & Socioeconomic Data Analysis - Python and ML [[GitHub](#)]

- Engineered an end-to-end statistical learning pipeline on multi-source global datasets to predict national happiness scores.
- Applied feature engineering and regression models achieving $R^2 = 0.88$ and identifying key socioeconomic drivers.

Renewable Energy Storage Optimization - Deep Learning [[GitHub](#)]

- Developed ANN, LSTM and RNN models for VRFB power loss forecasting with Dr. Ankur Bhattacharjee.
- Improved prediction accuracy by **40-70%** enabling more cost-efficient and energy efficient VRFBs.