

Dhawal Modi

760 619 1393

✉ utsavmodi10@gmail.com

🌐 LinkedIn

🌐 Personal Webpage

Education

University of California - Merced

Aug 2023 - May 2025

Master of Science in Electrical Engineering & Computer Science (GPA: 3.90 / 4.00)

Rajiv Gandhi Proudhyogiki Vishwavidyalaya

Jul 2016 - Jun 2020

Bachelor of Engineering in Electronics & Communications Engineering (GPA: 3.27 / 4.00)

Technical Skills

Languages: Python, Java, Javascript, C++, CUDA, Matlab

Frameworks: Spring Boot, Hibernate, Node.js, Express.js, React, PyTorch, TensorFlow, FastAPI, Flask

Databases: Oracle SQL, PostgreSQL, IBM Db2

Technologies: Git, Jenkins, JUnit, JBehave, CSS, HTML, XML, BASH/Shell, \LaTeX

Experience

University of California, Merced

Aug 2024 - Dec 2024

Software Engineer / Graduate Student Researcher - Castro Lab

- Implemented cloud infrastructure for a EV Charger reservation app leveraging AWS RDS (PostgreSQL), Elastic Beanstalk for API management and Amplify for frontend deployment, ensuring scalable & maintainable application architecture.
- Developed a responsive web interface using React, TypeScript, and Tailwind CSS, integrated with RESTful backend services to provide real-time EV charger availability status to users.
- Architected a comprehensive PostgreSQL database schema incorporating user demographics and charging patterns, laying the groundwork for future equity-focused analysis of EV charger access and utilization.

University of California, Merced

Jan 2024 - Dec 2024

Deep Learning Engineer / Graduate Student Researcher - MoCA Lab

- Developed a mobile robotic platform using the AgileX SCOUT UGV to assist forest crews in reducing wood waste and preventing wildfires.
- Finetuned ENet and SegFormer Semantic Segmentation models for Robot path-finding on custom dataset with an mIOU of 0.83 and 0.72 respectively (improvement of 62% and 41% over baseline models).
- Trained and deployed ENet CNN model on Nvidia Orin AGX for real-time tasks, achieving 25ms inference time per frame.

Tata Consultancy Services Limited

Nov 2020 - Jul 2023

Software Developer

- Developed high-throughput (100,000 transactions/minute) payment processing system by implementing streamlined validation routines for Outward Direct Debits and Credit Transfer channels.
- Engineered high-reliability BPAY payment integration using Spring REST, implementing automated retry mechanisms, achieving 35% faster processing times with near-zero failure rate.
- Led microservices architecture development for rapid API prototyping, ensuring successful deployment to testing and production environments.
- Optimized Oracle SQL database queries, reducing Direct Debit and Credit Transfer Payment file upload times by 15% and boosting overall application performance.

Projects

Heart Activation time & Transmembrane Potential Reconstruction | PyTorch, Pandas, matplotlib, Python, Numpy

- Led a team of 3 undergraduate students at the Data Science Challenge hosted by Lawrence Livermore National Laboratory to implement and design Deep Learning models for Heartbeat classification & Transmembrane Potential curve reconstruction.
- Implemented Customized 1D SqueezeNet CNN model to predict Myocardium Activation Times and Transmembrane Potential Curve reconstruction with 97.46% accuracy on 1600 samples of unseen data.

Binary Classification with a Bank Churn Dataset | Python, Scikit, Seaborn, Matplotlib, Jupyter Notebooks

- Built a Binary Classifier to predict churn using XGBoost achieving an ROC-AUC percentage score of 88.5%.
- Created data visualizations for the training dataset using Python and Seaborn library revealing patterns in the dataset.