Aritra Chakrabarty

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Education

University of Colorado - Boulder — MS, Electrical Engineering (Focus on **Robotics & AI)**

GPA **-** 3.96 — *Expected Graduation - May 2025*

University of Michigan — BSE, Mechanical Engineering

GPA **-** 3.57 — *Graduation - May 2020*

Work Experience

APTIV — Troy, MI

Lead Vehicle Systems Test Engineer — *Feb 2022 - Jun 2023*

- Led the design and execution of 700+ vehicle-level system tests, overseeing DVPnRs for multiple vehicle platforms, while managing a team of 9 engineers.
- Reduced overall testing cycle time by 40% through streamlining the data analysis process, and introducing shorter metrics for evaluation (enabling more frequent test cycles).
- Standardized documentation and data analysis procedures for 22 engineers across 3 teams, cutting data analysis time by 30%.
- Conducted daily risk assessments and produced weekly reports to align stakeholders, allocate resources effectively, and ensure timely delivery of test milestones.

Vehicle Systems Test Engineer — *May 2021 - Jan 2022*

- Performed 50+ hours of closed-course vehicle testing per week on ADAS/AD prototypes, using CAN loggers, ethernet monitoring, and proprietary tools to validate system performance.
- Developed automated MATLAB scripts, reducing manual data analysis time by 50% and standardizing data extraction for each test case.
- Led autonomous vehicle testing initiatives, encompassing route design, data acquisition, and root-cause analysis to validate and refine autonomous systems.

Vehicle Systems Integration Engineer — *Sep 2020 - Apr 2021*

- Integrated ADAS/AD systems at bench and vehicle levels, employing Vector CANoe, CANape, vFlash, and Lauterbach to ensure effective inter-module communication and system functionality.
- Collaborated daily with Systems, Software, and Algorithm teams to develop and debug test system configurations, ensuring seamless feature integration and rapid bug resolution.
- Executed 3-4 evaluation drives per week (on-road and closed-course) to verify software functionality, system performance, and system-level interactions.

Coursework & Projects

Advanced Robotics — CSCI 5302

- Used ROS2 & Python, to implement SLAM using LIDAR data on an AWS-Deepracer robot, achieveing the fastest lap time in the class final.

Decision Making under Uncertainty — ASEN/CSCI 5264

- Implemented Q-Learning, SARSA, MCTS, and SARSOP for multiple MDP/POMDP problems, and studied heuristic vs. optimal policies in simulations.

Machine Learning — CSCI 5622

- Implemented classification & regression models (K-NN, logistic, CNNs) across different datasets, and investigated explainability with LIME.

Technical Skills

Languages: Python, Julia, MATLAB, C++, C

Technologies: ROS2, Vector CAN tools, Polarion, JIRA, Solidworks

Libraries: pandas, NumPy, seaborn, Matplotlib, scikit-learn, TensorFlow, Keras, Hyperopt, Flux.jl, POMDPs.jl