

EDUCATION

- Colorado State University** Fort Collins, CO
• *Master of Computer Science; GPA: 3.73/4.0* Aug 2022 - Dec 2024
Course Work: Deep Learning, ML & Time Series, Computer Vision, Secure Networks, Resilient Systems
- Vellore Institute of Technology** Vellore, India
• *Master of Technology in Software Engineering; CPI: 8.39/10.0* Jul 2015 - May 2020
Course Work: Web Technologies, Data Structures, Database Management System, Software Engineering

TECHNICAL SKILLS

- **Languages:** Python, SQL, C++, C, Bash, Julia, R, JavaScript, PHP, HTML, CSS, GoLang
- **Frameworks/Lib:** Hadoop, Spark, Tableau, Django, Scikit, React, NLTK, PyTorch, TensorFlow, Keras, Pandas, Numpy
- **Database:** PostgreSQL, Oracle, MySQL, MongoDB, DynamoDB, Hive, Presto, NoSQL, Cassandra
- **Software/Tools:** Slack, Git, Azure, AWS, GCP, Grafana, Jira, DataBricks, Kubernetes, PowerBI, Apache Kafka, Spark, Hadoop
- **Research:** CANBUS, J1939, Embedded ML, Secure Industrial Networking, Sensor Fusion, Real-Time AI & Edge Computing for IoT
- **Research Applications:** Autonomous Systems, Industrial Automation & Predictive Maintenance, Operational Resilient Systems

EXPERIENCE

- **Intel Corporation | Application Developer | Data Scientist** Aug 2024 - Present
 - Designed and implemented a computer vision-based AI solution to detect defects on semiconductor wafers, achieving an F1 score of 0.93 and 96% accuracy. This solution reduced manual inspection efforts, minimized tool downtime, and improved overall quality control. The project led to an estimated annual cost savings of over \$200k by increasing inspection efficiency and reducing production delays.
 - Built transformer-based generative AI tool trained on database schemas and prompts to generate SQL queries with 90%+ accuracy, enabling manufacturing technicians to access critical data without SQL knowledge, improving decision-making efficiency.
 - Developed and deployed full-stack web applications using Angular (frontend) and Django (backend) to visualize factory-level statistics, enabling real-time communication and insight-driven decision-making across manufacturing units.
 - Created interactive Power BI dashboards integrating AI insights to identify bottlenecks and trends. Enabled real-time KPI tracking and analytics-backed decisions, improving issue resolution time by 25% and supporting strategic planning across high-impact areas.
- **Colorado State University | Research Data Scientist** Jan 2023 - May 2024
 - Developed a robust data acquisition pipeline to capture and decode CANBUS messages from heavy vehicle ECM and multiple sensors using the J1939 Digital Annex; built a PyQt GUI for real-time visualization and analysis of multi-sensor CAN data metrics.
 - Conducted various experiments and in-depth analysis of analog sensor signals (voltage, resistance) and designed a machine learning regression model achieving over 90% accuracy to predict sensor outputs during failure scenarios, enhancing fault detection.
- **NetWitness | Software Engineer** Sept 2020 - Jul 2022
 - Developed shell scripting on AWS-hosted VMs to monitor, collect, and analyze performance metrics for network and log decoders (SaaS and on-prem), improving decoder efficiency by 30% and reducing error rates by 25% through automated data extraction.
 - Designed automated evaluators using Python with pytest, achieving 95% test coverage. Ensured consistent logic across SaaS modules through reusable validation rules and integrated automated feedback and triaging mechanisms for efficient troubleshooting.
 - Developed and integrated automated test suites on CI/CD and DevOps workflows with Jenkins, Terraform scripts on AWS IaaS. Used Kubernetes and Helm to orchestrate SaaS test environments and Grafana for monitoring, reducing post-deployment defects by 30%.
 - Integrated external security APIs like NetWitness (SaaS and on-prem) with RSA Archer on AWS to enhance SecOps workflows, enabling automated threat intelligence ingestion and incident correlation. Implemented Active Directory user provisioning for secure, role-based access and access control.
- **Dell EMC | Software Engineer** Aug 2019 - Aug 2020
 - Designed and implemented a threat model using the MITRE ATT&CK framework across multiple VMs, enabling detection of critical vulnerabilities and improving threat coverage by 40%, while reducing triage time by 30% through structured adversary mapping.
 - Built end-to-end test cases using Python UniTe Framework, cutting test time by 35% via optimized flows and parallel execution.

RESEARCH EXPERIENCE

- **Towards Operation Resiliency with Real-Time Sensor Analytics:** Heavy Vehicle Security using Machine Learning, Rays Cyber Research Labs, Colorado State University, Fort Collins.

OTHER PROJECTS

- **Personalized Book Recommendation(Python, Machine Learning)** : Built a BR system leveraging collaborative filtering and matrix factorization techniques, achieving 96% accuracy in predicting user interests from real-world datasets and metrics. (Aug 2022 - Nov 2022)
- **Flight Tracking System (Computer Vision, Object Tracking)** : Developed an aircraft tracking system using OpenCV and YOLOv5, achieving 25 FPS on 1080p video and an F1 score of 0.95 for accurate plane detection and tracking. (Jan 2023 - May 2023)
- **Sensor Data Forensics Using Raspberry Pi (C++, Python)** : Designed a Raspberry Pi system to extract and convert live CAN bus data from heavy vehicles. Achieved 92% accuracy in anomaly detection, aiding digital forensics and fault analysis. (Jan 2023 - May 2023)
- **Operational Resiliency of Heavy Vehicles (LSTM, Transformers)** : Enabled continuous anomaly detection during sensor dropouts by integrating an LSTM deep neural network model that predicted missing CAN bus sensor values in real time with over 90% accuracy, improving forensic reliability and maintaining data integrity under fault conditions. (Aug 2023 - Dec 2023)

AWARDS/ HONORS

- Awarded with outstanding performance at DELLEMC India Pvt. Ltd. 2019
- Recognized with Excellent Contribution Award by the Michigan State Police at the Cyber Auto Challenge. 2023