

Kiron Mateti, Ph.D.

Seasoned problem solver with 12+ years of experience in industrial autonomous guided vehicles, L4 autonomous semi-trucks, and defense. Proven ability to lead performance metrics teams in building data processing pipelines and dashboards that provide actionable, data-driven insight from diverse data sources.

38 Highland Drive
Telford, PA 18969

kiron.mateti@gmail.com
937-572-9655

U.S. Citizen (Male)
[linkedin profile](#)

Summary of Qualifications

- 3.5 years experience in the L4 autonomous semi-truck performance verification, responsible for data curation, requirements generation, simulation testing, data processing, metric evaluation, dashboarding, and reporting to senior leadership
- 4.5 years experience in industrial autonomous guided vehicle systems, working in perception, vehicle and actuator control, vehicle and site-wide root cause analysis, and operational performance analysis
- 4.5 years experience in government, working with research, development, testing and evaluation of electro-optic and infrared systems, improving measurement techniques with patented methods

Experience

Senior Software Engineer

September 2021 - Present

Torc Robotics, Inc, Blacksburg, VA

- Developed automated workflows for development teams to test and verify performance against component and subsystem requirements
- Developed automated reporting for CI/CD regression testing, and datalake connected dashboards to communicate results to engineering leadership
- Involved in safety system verification activities using ISO26262

Lead Perception Engineer

January 2017 - September 2021

John Bean Technologies, Automated Guided Vehicles, Chalfont, PA

- Responsible for full life cycle AGV development: sensor selection, algorithm prototyping, embedded C++ implementation, deployment, debugging, support and documentation
- Developed root cause analysis tools for vehicle performance, enabling field engineers to debug issues independently, leading to improved product placement accuracy and throughput, and decreased time on site
- Subject Matter Expert in numerous areas: lateral and longitudinal control and stability, hydraulic actuator control, AC motors, 2D lidars, 3D cameras, and sensor technologies
- Familiarity with B56.5 standard and safety Performance Levels

Research Scientist

June 2012 - January 2017

US Navy, Naval Surface Warfare Center (NSWC), Crane, IN

- Developed object tracking algorithms using Matlab, deployed on NVIDIA Jetson TK1 embedded hardware utilizing CUDA C/C++ and OpenCV
 - Analyzed, debugged, modeled and simulated electro-optic and infrared sensor system gimbal dynamics, control systems, and target geolocation
-

Education

Ph.D. in Electrical Engineering

May 2012

Pennsylvania State University, University Park, PA

Dissertation Title: *Flapping Wing Mechanisms for Pico Air Vehicle Applications Using Piezoelectric Actuators* ([pdf](#))

Candidacy Areas: State Space Estimation, and Probability and Stochastic Processes

B.S. in Electrical Engineering

June 2005

Wright State University, Dayton, OH

Specialization: Robotics and Control Systems, and Digital Signal Processing

Summary of Skills

Programming Languages:

- Python (pandas, numpy, scipy, opencv, awswrangler, plotly, dash), SQL, C++, Matlab/Simulink, LabView

Data Analysis and Visualization:

- ETL processes, Exploratory Data Analysis (EDA), Root Cause Analysis (RCA), performance metric and key performance indicator (KPI) development & analysis, large dataset handling

Robotics and Autonomous Vehicle Technology:

- ODD analysis, Pegasus scenario development, reference frame transformations, sensor calibration, object detection, tracking and fusion, machine learning basics

Systems Engineering:

- Requirements generation and test case development, Verification & Validation (V&V), systems analysis and integration, modeling and simulation, simulation-in-the-loop (SIL), hardware-in-the-loop (HIL)

Cloud Computing and DevOps:

- AWS (Athena, S3, Glue Crawler), Jenkins CI/CD, Docker, Datadog

Software Tools:

- Git, Linux, Bash, ROS, RViz, ROS2, Foxglove (MCAP tooling and Studio), JIRA, Confluence, Jama

Soft Skills:

- Excellent communication and presentation skills, ability to explain high-level concepts to lay people, problem solving mindset, independent handling and prioritization of multiple tasks

Patents and Publications

- Lead inventor on Patent [US 9,599,532](#), for wearable optical communication devices
 - Lead inventor on Patent [US 9,602,203](#), for vibration characterization methods for optics
 - Co-inventor on Patent [US 10,670,687](#), for night-vision goggle effectiveness measurement
 - Published 13 articles in IEEE/ASME journals/conferences, ([researchgate.net](#))
-