

Zachary Miller

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Senior Software Engineer

Experienced senior software engineer with over 6 years in self-driving technology. Skilled in cloud infrastructure, with emphasis on the curation and delivery of geospatial data. Successfully led a mapping strategy from core algorithms to organizational infrastructure and SaaS. Ready to take on new challenges and drive innovation in a fast-paced environment with talented peers.

WORK EXPERIENCE

Torc Robotics Remote • Aug 2018 - Present

Senior Software Engineer

- Led design and implementation among cross-functional teams to deliver a scalable mapping system to meet business objectives
- Collaborated with stakeholders to design and deliver within 3 months a custom, extensible HD map format for an embedded solution
- Developed a POC routing API, enhancing coordination and mission control for a fleet of self-driving vehicles
- Mentored three junior engineers, enhancing their skills in HD map data transformation and algorithm optimization for improved project delivery
- Worked with principal community to maintain team alignment on latest standards and best practices

Software Engineer III, Product Owner

- Optimized infrastructure of the organization's map processing pipeline, accelerating the frequency of deliverables by 8x
- Developed tooling for the automation of map data maintenance and validation, improving efficiency by several orders of magnitude
- Implemented scalable MapReduce frameworks to eliminate over 99% of build times for delivering map data to Simulation Environment in the format used by our partner, Applied Intuition

Self-driving Test Engineer

PATENTS

LOCALIZING VEHICLES USING RETROREFLECTIVE SURFACES	Aug 2023
PREDICTION OF ROAD GRADE FOR AUTONOMOUS VEHICLE NAVIGATION	Jul 2023
DETECTION AND MAPPING OF GENERALIZED RETROREFLECTIVE SURFACES	Jul 2023

CERTIFICATIONS

AWS Certified Cloud Practitioner Amazon Web Services	Mar 2025 - Mar 2028
Certified SAE® 5 Product Owner/Product Manager Scaled Agile, Inc	May 2022 - May 2023

SKILLS

AWS: API Gateway, Athena, CloudWatch, CodeBuild, DynamoDB, EventBridge, Fargate, Lambda, Terraform

Python: Boto3, FastAPI, GeoPandas, Mkdocs, Moto, Pandera, Pyarrow, Pydantic, Pytest

DevOps / Frameworks: Datadog/PagerDuty, Docker, Git, Jama, Jenkins, Jira, SAE/Agile Product Management, Test-driven Development

Languages / Systems: Bash / Shell, Groovy, Java, NodeJS/JavaScript, Overpass QL, ROS(2), SQL, Technical Communication and Documentation

EDUCATION

M.S. in Engineering Mechanics Virginia Tech Blacksburg, VA GPA: 4.0 May 2018
B.S. in Engineering Science and Mechanics Virginia Tech GPA: 3.62 May 2017 Minors: Mathematics, Psychology