

Abhishek Venkataraman

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Experience

Nuro

Mountain View, California

TECHNICAL LEAD MANAGER, BEHAVIOR EVALUATION

Feb 2022 - Present

- Managing a highly cross functional team responsible for evaluating behavior - providing Autonomy devs and key stakeholders dense metrics on Behavior performance
- Lead the product vision and roadmap through eval vision workshop, synthesizing user requirements and collaborating with key stakeholders within and in partner teams - simulation, data platform, perception, systems & safety. Unified and prioritized efforts across multiple teams
- Drove design and development of several internal tools, dashboards and pipelines for scaling and maintaining core evaluation capabilities
- Improved developer productivity by converting manual workflows into highly automated pipelines through both internal and third party automation tools

May Mobility

Ann Arbor, Michigan

SENIOR ROBOTICS ENGINEER, PERCEPTION

Jun 2018 - Jan 2022

- Architected and deployed a scalable pipeline in AWS/Databricks to ingest field data and calculate metrics to measure autonomy performance
- Architecture lead for interaction with Vulnerable Road Users (VRU)- designed feature from classification to vehicle behavior, team of 3
- Developed end to end semantic classification pipeline for object tracking starting from image acquisition, sensor fusion and temporal tracking
- Spearheaded optimizations for policy rollouts for multi-policy decision-making, enabling 3X speed up of behavior prediction
- Scaled the autonomy stack to work across multiple platforms including Polaris GEM, Lexus, Sienna delivering equivalent ride quality
- Product lead, responsible for software development and deployment for classification of traffic lights with vehicle camera
- Mentored 10+ members of Autonomy and AutoOps, created on-boarding process for new hires, setting them up for success
- Launched and maintained scalable autonomy software in 9 sites across the US and Japan, generating \$1M + in ride revenue

Ather Energy Pvt. Ltd.

Bangalore, India

SENIOR ENGINEER, TEAM LEAD

Jul 2015 - Jul 2016

- Managed a team of 6, responsible for designing electrical (signal and power) interface between all subsystems, waterproof housings for vehicle dashboard and power distribution unit
- Performed system level DFMEA and incorporated hardware changes to accommodate on-board diagnostics

Schlumberger Asia Services Ltd.

Mumbai, India

SENIOR ENGINEER

Jul 2012 - May 2015

- Lead Engineer for ONGC offshore wireline operations; carried out over 80 logging jobs managing a crew of 8
- Planned and executed many high profile (\$400K revenue/job) operations in offshore oil rigs, lasting over 150 hours while keeping quality and safety as priority, taking critical decisions while operating with limited connectivity to base

Education

University of Michigan

Ann Arbor, Michigan

MASTER'S IN ROBOTICS

GRADUATE STUDENT RESEARCH ASSOCIATE

- Enabled Personal Robots (Fetch/ HSR) to interact using DNN. Papers:
 - Kinematically-informed Interactive perception [Link]
 - SPARE - an extendable articulated object RGBD dataset [Link]

GRADUATE STUDENT INSTRUCTOR

- Mathematics for Robotics* - linear algebra including, vector spaces, orthogonal basis, SVD, QR Factorization, BLUE, MVE and Kalman Filters
- Advanced Topics in Computer Vision* - pictorial structures, graphical models, CNN, GAN, RNN, LSTM, auto-encoders.

Indian Institute of Technology Madras

Chennai, India

B.TECH IN MECHANICAL ENGINEERING AND M.TECH IN PRODUCT DESIGN

Skills

Language/ Framework	C++, C, Python, SQL, Tensorflow, JS, Pytorch, OpenCV, ROS, bash, HTML/CSS, bazel, retool, buildkite
Autonomus vehicles/ Robotics	<i>Behavior Evaluation</i> - Scene Management, Metrics, simluation, labelling, workflow management
	<i>Perception</i> - segmentation, object tracking, sensor fusion, localization,
	<i>Planning</i> - Multi policy decision making, backup planning, intent estimation
Tools	<i>Tooling</i> - Camera calibration, 3D mapping, 3D visualization, image annotation, data dashboard
	git, gdb, valgrind, docker, Jenkins CI, heaptrack, vtune, tensorsrt, Jira, AWS, Bigquery, Databricks, linux
	<i>Sensors</i> - Cameras (RGB, depth), Lidars (Velodyne, Ouster, Cepton), Radar, GPS, IMU, encoders
Hardware interface	<i>Platform</i> - Lexus, Sienna, GEM, Jetson TX2/Nano, Arduino, Raspberry Pi, Nvidia GPU, Fetch, HSR