Aaron Angert

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OBJECTIVE

To deliver value from technical leadership, communication, and teamwork within the autonomous vehicle field.

PROFESSIONAL EXPERIENCE

GENERAL MOTORS – AUTONOMOUS VEHICLE SIMULATION ENGINEER, MILFORD MI **2023-**

Lead developer on our rear virtual bumper test suite, contributed robust solutions to critical active safety features, drove enhancements in code and repository management, automated processes, and led cross-functional team initiatives.

TECHNICAL SKILLS: Python, C, Virtual Test Drive, CarSim, Matlab, Simulink, dSPACE, Git, ARXML/AUTOSAR, Control Desk, INCA, Vehicle Spy, DFSS training

IBM – SOFTWARE ENGINEER, AUSTIN TX **2014-2017**

Deployed and maintained Openstack cloud IaaS platform. Developed and managed internal monitoring tools for deployed cloud.

TECHNICAL SKILLS: Flask, Ansible, Couchdb, DevOps

PM SKILLS: Agile development, Scrum, Sprints, Jira, Git

EDUCATION

MS, PHD TRACK – COMPUTER SCIENCE & ENGINEERING

TEXAS A&M UNIVERSITY – **2017 - 2022**

Autonomous vehicles and motion planning under supervision of Dr. Song – Net Bot Laboratory

3.8/4.0 GPA, Graduated Fall **2022**

BS – COMPUTER SCIENCE

UNIVERSITY OF TEXAS AT AUSTIN

Graduated **2014**

PUBLICATIONS

Proprioceptive Localization Assisted by Magnetoreception, IEEE RA-L **2019**

Neural information retrieval: at the end of the early years. Information Retrieval Journal **2017**

AUTONOMOUS VEHICLE COMPETITIONS AND AWARDS

SAE AUTODRIVE CHALLENGE™ I/II **2019– 2022**

Team captain of a group of eight graduate students for the Autodrive challenge autonomous vehicle competition. Major focus on program management deliverables, local motion planning, behavior state machines, HD map integration, systems engineering and vehicle simulations.

TECHNICAL SKILLS: Matlab, Simulink, Unreal, ROS/ROStest, ArcGIS, Python, C++, RQT-Gui, linux, Github

PM SKILLS: Gantt charts, Pert analysis, Critical path analysis, WBS, CDR

OUTCOME: 1st place Overall Dynamic Challenge I year 4
- 1st place Highway Challenge II year 1
- 2nd place Simulation Challenge II year 1
- 2nd place Overall & Dynamic II year 1
- 3rd place Simulation Challenge I year 3

INDY AUTONOMOUS CHALLENGE **2020– 2021**

Developed motion planning software for a simulated Indy 500 race

TECHNICAL SKILLS: Python, Ansys SCADE, ROS 2, RTI Connext DDS, Simulated lidar, Camera, Radar

OUTCOME: 3rd place final simulation race

PASSION PROJECTS

AUTONOMOUS VEHICLE SIMULATION **2019 - 2023**

Simulation within Matlab, Simulink, and Unreal Engine environments. Virtual outputs included Lidar, camera, IMU Sensor fusion. Challenges included collision avoidance, traffic light interaction, emergency braking, and waypoint following. Our team placed 2nd overall.

LOCAL MOTION PLANNING **2020-2021**

Direct management over development of the local motion planner for our Chevrolet Bolt autonomous vehicle as a part of the Autodrive Challenge™ I year 4. Behaviors included stopping, crosswalk navigation with pedestrians, turns and turn signals, and dynamic obstacle avoidance.

SKILLS

LANGUAGES: Python, C++, Java, C#, Javascript, Matlab

PROJECT MANAGEMENT FOR MOBILITY ENGINEERS: Feasibility assessment, FMEA, Stakeholder grid monitoring, Risk management

SIMULATION: Simulink, CarSim, dSpace, VTD, Unreal, Unity, SUMO, HIL/SIL testing

ROBOTICS/AI: Machine learning, Computer vision, Motion planning, SIFT, Kalman filtering, CNN, YOLO (traffic light/sign detection), Motion planning (RRT, PRM, A*)

HARDWARE: IMU, GPS, HIL, Lidar processing, Camera, CAN bus, Embedded systems, ESP8266