

Aaron Angert

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EDUCATION

TEXAS A&M UNIVERSITY Aug 17 – Nov 22

MS – COMPUTER SCIENCE & ENGINEERING

Autonomous vehicles and motion planning
College Station, TX 3.77/4.0 GPA

UNIVERSITY OF TEXAS Aug 12 – May 14
Austin, TX

BS – COMPUTER SCIENCE

TEACHING EXPERIENCE

GRADUATE ASSISTANT LECTURER SPRING 22

CSCE 482: Senior design capstone,
30 students, oversaw eight graduate team's
autonomous vehicle projects

GRADUATE TEACHING ASSISTANT FALL 17–FALL 21

CSCE 482: Senior design capstone
CSCE 452: Intro to mobile robotics
CSCE 314: Programming languages

SKILLS

LANGUAGES:

Python, C++, makefiles, Java, C#, Javascript,
Visual Basic(Excel), Matlab, Simulink, Haskell

PROJECT MANAGEMENT FOR MOBILITY ENGINEERS:

Feasibility assessment, FMEA, Stakeholder grid
monitoring, risk management

SPECIALIZED PACKAGES:

SUMO, Unreal, Unity, docker, multithreading,

ROBOTICS/AI:

machine learning, computer vision, SIFT,
reinforcement learning, CNNs, YOLO (traffic
light/sign detection), motion planning (RRT,
PRM, A*)

HARDWARE:

IMU, GPS, Lidar processing, Camera, CANBUS,
embedded systems, ESP8266

COURSEWORK

Analysis of Algorithms, Machine Learning,
Convex Optimization,
Intelligent systems and robotics, Linear models,
Linear Multivariable systems

PUBLICATIONS

Proprioceptive Localization Assisted by
Magnetoreception: IEEE Robotics and
Automation Letters

Neural information retrieval: at the end of the
early years. Information Retrieval Journal, 21,
111-182.

PROFESSIONAL EXPERIENCE

IBM – SOFTWARE ENGINEER, AUSTIN TX

MAY '14-JUNE '17

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

COMPETITIONS

SAE AUTODRIVE CHALLENGE™ I/II

2019–2022

Team captain for the Autodrive challenge autonomous vehicle competition,
Major focus on program management deliverables, with technical focus on
local motion planning, behavior state machines, HD map integration,
systems engineering and vehicle simulations.

TECHNICAL SKILLS: Matlab, Simulink, Unreal, ROS/ROStest, ArcGIS,
PostgreSQL, python, c++ , RQT-Gui, linux, github

PM SKILLS: Gantt charts, Pert analysis, critical path analysis, WBS, CDR.

INDY AUTONOMOUS CHALLENGE

2020–2021

Developed software for motion planning for a simulated race vehicle on the
Indianapolis motor speedway within the Ansys SCADE software suite, using
a Python and DDS communication stack for networked races.

Skills: Ansys SCADE, ROS 2, RTI Connex DDS, simulated lidar, camera, radar

AWARDS

SAE AUTODRIVE CHALLENGE™ I/II

2019-2022

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

3rd place final simulation race

MAJOR PROJECTS

LOCAL MOTION PLANNING

2020-2021

Direct management and responsibility over development of the local motion
planner for our chevy bolt autonomous vehicle as apart of the Autodrive
Challenge™ I year 4. Behaviors included stopping, crosswalk navigation with
pedestrians, turns and turn signals, rail road crossings, dynamic obstacle
avoidance, communication between the global motion planner and vehicle
controller. A rqt-gui was created to translate and test behaviors mapped
from Mcity to the Rellis testing facility.

AUTONOMOUS VEHICLE SIMULATION

2021 - 2022

Leadership and management over simulation of our chevy bolt within the
Matlab, Simulink, and Unreal Engine environments. Virtual outputs included
Lidar, camera, IMU, which were used to test vehicle modules directly through
ROS.

For the Year 1 Autodrive challenge II, I lead a group of undergrad capstone
students to complete simulation challenges within Simulink such as collision
avoidance, traffic light interaction and stopping, emergency braking, and
waypoint following with Software in the loop testing with equivalent results.
Our team ended up placing 2nd overall.