Ross Alexander

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EDUCATION

Stanford University
M.S. in Aeronautics & Astronautics, Artificial Intelligence Track — *GPA: 4.1* — June 2021

Texas A&M University
B.S. in Aerospace Engineering, Honors — *GPA: 4.0* — May 2019

SKILLS

- *Languages:* Python, Julia, MATLAB, C++, SQL, HTML/CSS
- *Libraries:* PyTorch, Tensorflow, Scikit-Learn, PySpark, POMDPs.jl

EXPERIENCE

Stanford Intelligent Systems Lab (SISL) | Stanford University — February 2020 – September 2021
Autonomous Driving Research

- Planning under uncertainty for autonomous driving in urban scenarios with smart infrastructure
- Developed and implemented novel sensor- and decision-fusion algorithm enabling tractable planning that achieves 0% collision rate in high-risk occluded pedestrian scenarios

COVID-19 Policy Research

- Adaptive control of spread of epidemics using graph-mined contact network models
- Developed end-to-end decision support tool utilizing modified Monte Carlo tree search (MCTS)

Stanford Pre-Collegiate Studies (SPCS) | Stanford University — June 2020 – August 2021
Course Instructor

- Developed 80+ hours of undergraduate-level machine learning and data science curriculum
- Lead instructor for 7 two-week courses, taught 100+ students, avg. overall course ratings ~4.6/5.0

CFD Research Corporation | Huntsville, Alabama — May 2019 – August 2019
Machine Learning Intern

- Researched, implemented, and trained deep Gaussian processes (deep GPs) for regression tasks
- Leveraged deep GPs in active learning tasks for ~20% increase in sample efficiency over shallow GPs
- Co-authored research proposals and helped secure contracts totaling $500K+

PROJECTS

- *Learning Unregularized Quaternion Knowledge Graph Embeddings:* ~8% MRR increase over SOTA
- *Active Learning for Efficiently Constructing Surrogate Models:* GPs outperform DNNs for active learning
- *Randomized Low-Rank Approximation of Kernel Matrices in Gaussian Processes:* >2x faster at 10^{-15} error

ACHIEVEMENTS

- *Stanford Graduate Fellowship in Science & Engineering:* Top fellowship for incoming STEM Ph.Ds.
- *Texas A&M University President's Endowed Scholar:* Top scholarship for incoming students
- *Charles Hoult Award for Modeling & Simulation:* 2017 recipient out of 83 college rocketry teams (IREC)