Ross Alexander

rbalexan@stanford.edu | 703.310.9233 | *LinkedIn:* linkedin.com/in/rbalexan | *Website:* rbalexander.me

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

EXPERIENCE

Stanford Intelligent Systems Lab (SISL) — 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 data-driven graph-mined contact network models
- Developed end-to-end decision support tool utilizing modified Monte Carlo tree search (MCTS)

Stanford Pre-Collegiate Studies (SPCS) — 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 — 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

- Data-Driven Modeling of Stanford Campus Reopening: *Bayesian parameter inference & ODE simulation*
- Hierarchical Stock Price Prediction: *Clustered ridge, elastic net, and XGBoost regressors using lag vars.*
- Learning Unregularized Quaternion Knowledge Graph Embeddings: *~8% MRR increase over SOTA*
- Active Learning for Efficiently Constructing Surrogate Models: *GPs outperform DNNs in active learning*

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*