Ross B. Alexander

CONTACT INFORMATION

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703.310.9233

EDUCATION

M.S. Aeronautics & Astronautics, Stanford University, Palo Alto, CA **05/2021**
Supported by 3-year Stanford Graduate Fellowship (SGF)

B.S. Aerospace Engineering (Honors), Texas A&M University, College Station, TX **05/2019**

RESEARCH INTERESTS

Future graduate research is focused on optimization, statistical machine learning, reinforcement learning, decision theory, and human-centered autonomous systems.

TEACHING EXPERIENCE

Advanced Numerical Simulation (AERO 430), Teaching Assistant
Texas A&M University, Spring 2018 – Spring 2019
Numerical and analytical simulation of physical problems in sciences and engineering using applied methods; developing and using numerical techniques for physical problems described by nonlinear algebraic equations, ordinary and partial differential equations.

Engineering Mathematics II (MATH 152), Teaching Assistant
Texas A&M University, Spring 2017
Differentiation and integration techniques and their applications (area, volumes, work), improper integrals, approximate integration, analytic geometry, vectors, infinite series, power series, Taylor series, computer algebra.

Engineering Mathematics (ENGR 289), Teaching Assistant
Texas A&M University, Fall 2016
Study of functions, graphs of polynomial and rational functions, radical functions, exponential and logarithmic functions, inequalities, trigonometric functions, fundamental identities, right triangles, trigonometric equations.

ACADEMIC EXPERIENCE

Undergraduate Researcher **08/2018 – 12/2018**
Texas A&M University, College Station, TX

Undergraduate Research Assistant **01/2017 – 05/2017**
Texas A&M University, National Aerothermochemistry Lab, College Station, TX

PROFESSIONAL EXPERIENCE

Machine Learning & Simulation Intern **05/2019 – 08/2019**
CFD Research Corporation, Huntsville, AL

Hypersonics Intern **05/2018 – 08/2018**
CFD Research Corporation, Huntsville, AL

Computational Analyst Intern **05/2017 – 08/2017**
Corvid Technologies, Mooresville, NC

Publications (Unrefereed)

5. Alexander, R. B., Ling, J. S. (2019), *Multi-segment dynamic pricing for airline tickets using model-free reinforcement learning*, Final project for CS 238: Decision Making Under Uncertainty graduate course at Stanford University
4. Alexander, R. B., Kaminsky, A. L. (2019), *Optimization of guided weapon designs with a stochastic objective function using a genetic algorithm*, Report produced for CFD Research Corporation during Summer 2019 internship
3. Alexander, R. B., Caesar, J. M., Doddanavar, R. C., Doll, J. Q. (2018), *Integrated flight modeling: trajectory analysis and hybrid engine performance*, Conference proceedings of the 2018 Spaceport America Cup
2. Alexander, R. B. (2017), *Correlation study of CFD turbulence modeling approaches for an axisymmetric missile concept*, Report produced for Corvid Technologies during Summer 2017 internship
1. Alexander, R. B. (2017), *CFD analysis and optimization of flow deflector geometry for a supersonic free jet*, Conference proceedings of the 2017 Spaceport America Cup

**Publications available on personal website*

Presentations

4. *Integrated Flight Modeling: Trajectory Analysis and Hybrid Engine Performance*, 2019 Texas A&M University Student Research Symposium (SRW), College Station, TX, March 2019
3. *Design, Development, and Testing of a Hybrid Sounding Rocket*, Southwest Aerospace Symposium (AIAA North Texas Chapter), Arlington, TX, September 2018
2. *Integrated Flight Modeling: Trajectory Analysis and Hybrid Engine Performance*, 2018 Spaceport America Cup Conference, Las Cruces, NM, June 2018
1. *CFD Analysis and Optimization of Flow Deflector Geometry for a Supersonic Free Jet*, 2017 Spaceport America Cup Conference, Las Cruces, NM, June 2017

Honors & Awards

Stanford University

Stanford Graduate Fellowship in Science & Engineering (SGF) (2019-2022)

Texas A&M University

Dean's Honor Roll (Spring 2016, Fall 2016, Spring 2017, Spring 2018, Fall 2018)
Larry J. McQuien '76 "Take Flight" Award (2018-2019)
Donna and Dub Jett '68 Aerospace Engineering Scholar (2017-2018)
Hugh G. Robinson Endowed Opportunity Award (2015-2019)
Mildred & Willy F. Bohlmann, Jr. '50 President's Endowed Scholar (2015-2019)

General James H. Doolittle Scholar (05/2019), Communities Foundation of Texas (CFT)
Charles Hoult Award for Modeling & Simulation (06/2017), Experimental Sounding Rocketry Association
Eagle Scout (08/2014), Boy Scouts of America

Professional Memberships

Association for the Advancement of Artificial Intelligence (AAAI)
American Institute of Aeronautics and Astronautics (AIAA)
Institute of Electrical and Electronics Engineers (IEEE)

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