Ross B. Alexander

CONTACT INFORMATION

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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 estimation and control of stochastic systems, optimization, statistical machine learning, decision-making systems, autonomy, and reinforcement learning (RL).

TEACHING EXPERIENCE

AERO 430: Advanced Numerical Simulation, 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.

MATH 152: Engineering Mathematics II, 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.

ENGR 289: Engineering Mathematics, 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

Texas A&M University Sounding Rocketry Team (SRT) **08/2015 – 05/2019**
Texas A&M University, College Station, TX
Propulsion Lead (06/2018-05/2019), Propulsion Specialist (06/2017-05/2018), Dynamics Specialist (06/2016-05/2017), Business Coordinator (08/2015-05/2016)

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)

3. Alexander, R. B., Caesar, J. M., Doddanavar, R. C., Doll, J. Q. (2018), *Integrated flight modeling: trajectory analysis and hybrid engine performance*, Extended abstract submitted and accepted for 2018 Spaceport America Cup Conference
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*, Extended abstract submitted and accepted for 2017 Spaceport America Cup Conference

**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

American Institute of Aeronautics and Astronautics (AIAA)
Institute of Electrical and Electronics Engineers (IEEE)

Outreach

Invited reviewer, public high school rocketry class design review **02/2019**
Brazoswood High School, Houston, TX
Invited video Q&A session, public high school rocketry class **08/2018**
Brazoswood High School, Houston, TX
Activity booth, STEMFest event for Girl Scouts interested in STEM fields **02/2018**
Texas A&M University, College Station, TX
Invited video Q&A session, public high school rocketry class **10/2017**
Brazoswood High School, Houston, TX
Event supporter, Arrowmoon Rocket Day event for Boy Scouts **09/2017**
Texas A&M University, College Station, TX
Event supporter, Arrowmoon Rocket Day event for Boy Scouts **09/2016**
Texas A&M University, College Station, TX

References

Dr. Srinivas R. Vadali, Professor of Aerospace Engineering, Texas A&M University
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College Station, TX 77843
email: svadali@tamu.edu
office phone: 979-845-3918

Dr. Adonios Karpetis, Associate Professor of Aerospace Engineering, Texas A&M University
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College Station, TX 77843
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office phone: 979-458-4301

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Huntsville, AL 35806
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office phone: 256-726-4826

Dr. Andrew Kaminsky, Senior Engineer, CFD Research Corporation
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email: andrew.kaminsky@cfdrc.com
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