

Ross B. Alexander

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| CONTACT INFORMATION | William F. Durand Building 496 Lomita Mall Stanford, CA 94305 USA | rbalexander@stanford.edu rbalexander.me 703.310.9233 |
| EDUCATION | M.S. Aeronautics & Astronautics , Stanford University, Palo Alto, CA <i>Supported by 3-year Stanford Graduate Fellowship (SGF)</i> B.S. Aerospace Engineering (Honors), Texas A&M University, College Station, TX | 05/2021 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 <i>Texas A&M University, Spring 2018 – Spring 2019</i> 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 <i>Texas A&M University, Spring 2017</i> 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 <i>Texas A&M University, Fall 2016</i> 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) Texas A&M University, College Station, TX <i>Propulsion Lead (06/2018-05/2019), Propulsion Specialist (06/2017-05/2018), Dynamics Specialist (06/2016-05/2017), Business Coordinator (08/2015-05/2016)</i> | 08/2015 – 05/2019 |
| | Undergraduate Researcher Texas A&M University, College Station, TX | 08/2018 – 12/2018 |
| | Undergraduate Research Assistant Texas A&M University, National Aerothermochemistry Lab, College Station, TX | 01/2017 – 05/2017 |
| PROFESSIONAL EXPERIENCE | Machine Learning & Simulation Intern CFD Research Corporation, Huntsville, AL | 05/2019 – 08/2019 |
| | Hypersonics Intern CFD Research Corporation, Huntsville, AL | 05/2018 – 08/2018 |
| | Computational Analyst Intern Corvid Technologies, Mooresville, NC | 05/2017 – 08/2017 |

PUBLICATIONS (UNREFEREED)

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*, 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

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

REFERENCES

Dr. Srinivas R. Vadali, Professor of Aerospace Engineering, Texas A&M University
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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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Dr. Andrew Kaminsky, Senior Engineer, CFD Research Corporation
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