

# Ross B. Alexander

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CONTACT INFORMATION	William F. Durand Building 496 Lomita Mall Stanford, CA 94305 USA	Website   LinkedIn rbalexan@stanford.edu 703.310.9233
RESEARCH OBJECTIVES	Graduate research is focused on statistical machine learning, reinforcement learning, decision theory, autonomous driving, and human-centered autonomous systems.	
EDUCATION	<b>M.S. Aeronautics &amp; Astronautics</b> , Stanford University, Palo Alto, CA <i>Supported by 3-year Stanford Graduate Fellowship in Science &amp; Engineering (SGF)</i> <b>B.S. Aerospace Engineering</b> (Honors), Texas A&M University, College Station, TX	<b>06/2021</b> <b>05/2019</b>
ACADEMIC EXPERIENCE	<b>Graduate Researcher</b> Stanford Intelligent Systems Lab (SISL), Stanford University <i>Decomposition Methods for Object Detection on Occluded Sidewalk</i> , (Ongoing) Principal Investigator (PI) – Mykel Kochenderfer, Ph.D. Supervisor – Ransalu Senanayake, Ph.D.	<b>03/2020 – Present</b>
PROFESSIONAL EXPERIENCE	<b>Machine Learning &amp; Simulation Intern</b> CFD Research Corporation, Huntsville, AL  <b>Hypersonics Intern</b> CFD Research Corporation, Huntsville, AL  <b>Computational Analyst Intern</b> Corvid Technologies, Mooresville, NC	<b>05/2019 – 08/2019</b> <b>05/2018 – 08/2018</b> <b>05/2017 – 08/2017</b>
TEACHING EXPERIENCE	<i>Texas A&amp;M University</i> <b>Advanced Numerical Simulation</b> (AERO 430), Teaching Assistant 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.  <b>Engineering Mathematics II</b> (MATH 152), Teaching Assistant 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.  <b>Engineering Mathematics</b> (ENGR 289), Teaching Assistant Study of functions, graphs of polynomial and rational functions, radical functions, exponential and logarithmic functions, inequalities, trigonometric functions, fundamental identities, right triangles, trigonometric equations.	<b>01/2018 – 05/2019</b> <b>01/2017 – 05/2017</b> <b>08/2016 – 12/2016</b>
HONORS & AWARDS	<i>Stanford University</i> <b>Stanford Graduate Fellowship in Science &amp; Engineering (SGF)</b> (2019-2022)  <i>Texas A&amp;M University</i> <b>Dean's Honor Roll</b> (Spring 2016, Fall 2016, Spring 2017, Spring 2018, Fall 2018) <b>Larry J. McQuien '76 "Take Flight" Award</b> (2018-2019) <b>Donna and Dub Jett '68 Aerospace Engineering Scholar</b> (2017-2018) <b>Hugh G. Robinson Endowed Opportunity Award</b> (2015-2019)	

**Mildred & Willy F. Bohlmann, Jr. '50 President's Endowed Scholar** (2015-2019)

*Other Awards*

**General James H. Doolittle Scholar** (05/2019), Communities Foundation of Texas (CFT)

**Charles Hoult Award for Modeling & Simulation** (06/2017), Experimental Sounding Rocketry Assoc.

**Eagle Scout** (08/2014), Boy Scouts of America

SKILLS

**Languages** – Expert in MATLAB. Proficient in Julia, Python, Bash, LaTeX.

**Operating Systems** – Proficient in macOS, Linux/Unix, Windows.

PUBLICATIONS  
IN PROGRESS

1. Kaminsky, A. L, **Alexander, R. B.** (2021), *Optimization of guided weapon designs with a stochastic objective function using a genetic algorithm*,

*\*To be submitted to AIAA SciTech Forum, Nashville, TN, Jan. 2021*

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

PROFESSIONAL  
SERVICE

**Journal referee**, Journal for Artificial Intelligence Research (JAIR)

**2020 – Present**

**Member**, Association for the Advancement of Artificial Intelligence (AAAI)

**2019 – Present**

**Member**, Institute of Electrical and Electronics Engineers (IEEE)

**2019 – Present**

**Member**, American Institute of Aeronautics and Astronautics (AIAA)

**2018 – Present**