

EMILY WILLIAMS

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🌐 emlyjwllms.github.io

EDUCATION

Massachusetts Institute of Technology

Sept 2021 - Present

Doctor of Philosophy in Aeronautics and Astronautics
Specialization in Computational Science and Engineering

GPA: TBD

University of Illinois at Urbana-Champaign

Aug 2017 - May 2021

Bachelor of Science in Aerospace Engineering
Minor in Atmospheric Sciences, Concentration in Computational Science and Engineering

GPA: 3.95 / 4.00

RESEARCH EXPERIENCE

ALD Research Group

Start Fall 2021

Advisor: Adrián Lozano-Durán, PhD

Cambridge, MA

- Employing quantum computing for numerical simulations of hypersonic flows
- Using machine learning to predict and model the dynamics of turbulence

Numerics and Unsteady Flows (NUF) Group

Summer 2020 – Spring 2021

Advisor: Andres Goza, PhD

Champaign, IL

- Optimized higher order method using immersed boundary smooth extension
- Used extended forcing for continuous boundary solution for the fluid-structure interface

Center for Hypersonics & Entry Systems Studies (CHESS)

Spring 2020 – Spring 2021

Advisor: Marco Panesi, PhD

Champaign, IL

- Used neural networks to fit potential energy surfaces and acquire chemical reaction rates
- Performed optimization and regularization techniques for uncertainty quantification
- First recipient of the Scott R. White AE Visionary Scholarship for excelling in undergraduate research

TEACHING EXPERIENCE

Head Engineering Learning Assistant

Spring 2019 – Spring 2021

ENG 100: Engineering Orientation

Champaign, IL

- Instructed two ENG 100 sections of 20+ first-year aerospace undergraduate students each
- Oversaw all ENG 100 course activities for the college while providing direction, guidance, and mentorship

Course Developer & Instructor

Spring 2020

AE 199 SAT: Introduction to CubeSat Design & Development

Champaign, IL

- Created engineering technical elective to introduce underclassmen to satellite development
- Served as primary instructor and wrote course curriculum for 25+ undergraduate students

Course Developer & Teaching Assistant

Spring 2020 – Spring 2021

ENG 177: Grainger Engineering First-Year Experience (GFX) Leadership Scholars

Champaign, IL

- Provided a forum for strengthening leadership skills for underrepresented minorities in engineering
- Led in restructuring course to align with learning and leadership objectives

PROFESSIONAL EXPERIENCE

The Boeing Company

Summer 2020, Summer 2021

Space Electronics Product Design Automation Intern

El Segundo, CA (Remote)

- Hired through the Engineering Accelerated Hiring Initiative (EAHI) program
 - Automated process to interface between integrated PCB layout application and ANSYS for thermal analysis
 - Streamlined data forensics of thermal parameters for product design and defect origins for mitigating risk
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GE Aviation

Summer 2018

Product Operations Intern

Cincinnati, OH

- Hired through the Early Identification (EID) program
 - Executed technical solutions for changes in design of turbofan jet engine hardware
 - Reallocated 300+ fan blades for product development, expediting the development of 20 affected engines
 - Proactively identified maintenance, repair, and overhaul issues through tracking forecasted commits
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CAMPUS INVOLVEMENT

Lead Tutor

Fall 2019 – Spring 2021

Center for Academic Resources in Engineering

Champaign, IL

- Developed curriculum and led exam review sessions and tutoring hours for undergraduate students
 - Led recruitment efforts for new tutors and administrative logistics for walk-in tutoring and interactive portal
 - Nominated and awarded Tutor of the Year for the University of Illinois
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Women in Aerospace

Fall 2017 – Spring 2021

Department of Aerospace Engineering

Champaign, IL

- Planned agendas and allocated funds for week-long professional development trips and conferences
 - Expanded executive board from 5 to 10+ to focus on fundraising, outreach, and networking
 - Awarded Dale Margerum Memorial Award for exemplifying outstanding leadership qualities
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HONORS & AWARDS

AIAA Aviation Week Network 20 Twenties (2021) Grainger Engineering James Scholar Honors Program (2017 - 2021) University of Illinois Dean's List (2017 - 2021) Grainger Engineering Knight of St. Patrick (2021) University of Illinois Tutor of the Year (2021) Senior 100 Honorary (2021) NSF GRFP Honorable Mention (2021) Scott R. White Aerospace Engineering Visionary Scholarship (2020) Dale Margerum Memorial Award (2020) Philip Lazzara Memorial Scholarship (2020) Boeing Women in Engineering Scholarship (2018) Illinois Space Grant (ISGC) Scholarship (2018) GE Women's Network Scholarship (2018) Department of Aerospace Engineering Academic Scholarship (2018) Harold and Ruth Hayward Tau Beta Pi Scholarship (2018) College of Engineering Scholarship for Continuing Students (2018) H.S. Stillwell Memorial Scholarship (2018) Illinois Engineering Achievement Scholarship (2017) Margorie M. Voigt Turley and William H. Turley Scholarship (2017) MSCI Central States Chapter Scholarship (2017)