

Julia Di

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EDUCATION

Stanford University, Stanford, CA, USA

Ph.D. in Mechanical Engineering (Robotics) Sep 2018 – Jun 2024

- NASA Space Technology Research Fellow (2018 - present)
- David Sen-Lin Lee Fellowship (2018 - 2019)

Columbia University, New York, NY, USA

B.S. in Electrical Engineering | Minor in Computer Science Aug 2014 – May 2018

- Cumulative GPA: 3.90 / 4.00 (*Magna Cum Laude*)

RESEARCH EXPERIENCE

Biomimetics and Dexterous Manipulation Lab, Stanford University

Graduate Research Assistant, Mechanical Engineering Dept. Jan 2019 – present

- Improving tactile perception and tactile sensors for robot manipulation and interaction

CHARM Lab, Stanford University

Graduate Research Assistant, Mechanical Engineering Dept. Sep 2018 – Jan 2019

- Built a soft sensor array for detecting finger location on a multimodal haptic skin

Creative Machines Lab, Columbia University

Undergraduate Research Assistant, Mechanical Engineering Dept. Sep 2016 – present

- Built a bio-inspired 3D-printed quadruped for as an open-source machine learning platform

Sia Lab, Columbia University

Undergraduate Assistant, Biomedical Engineering Dept. Sep 2015 - Dec 2015

- Rapidly prototyped molding device to culture self-vascularizing tissues for critical limb ischemia

Columbia Laboratory for Unconventional Electronics, Columbia University

Undergraduate Research Assistant, Electrical Engineering Dept. Jan 2015 – May 2015

- Designed and constructed an ion sputterer to microfabricate thin-film bulk acoustic resonators

WORK EXPERIENCE

NASA Jet Propulsion Laboratory, Pasadena, CA USA

Graduate Research Intern Jun 2019 – Aug 2019

- Designed and tested resistive flex sensors for use as a bend sensor in PUFFER, an origami-inspired robot

Generation Orbit Launch Services, Inc., Atlanta, GA USA

Brooke Owens Fellow May 2018 – Jul 2018

- Designed flight computer and other key electrical circuit boards for hypersonic rocket startup

Lockheed Martin Space Systems, Sunnyvale, CA, USA

Electro-Optical Engineering Intern Jun 2017 – Aug 2017

- Developed algorithms, with trade study, on FPGAs for aerial realtime onboard image processing capabilities

NASA Marshall Space Flight Center, Huntsville, AL, USA

Robotics Academy Research Associate Jun 2016 – Aug 2016

- Designed and tested a 3 DOF robotic arm with electrostatic gripper to capture orbital debris

Carleton Laboratory, New York, NY, USA

Undergraduate Laboratory Assistant May 2015 – Aug 2015

- Machined and analyzed samples of composite structure, and wrote 300+ pages of final report for client

LEADERSHIP EXPERIENCE

Women of AeroAstro (WoAA), National Board

Board Member

Oct 2019 – present

- Oversees and provides as-needed support to all West region chapters of WoAA

Stanford GradSWE, Stanford, CA, USA

Board Member

Sep 2018 – present

- Helps organize and manage events for Stanford's graduate women in STEM community

Columbia Space Initiative, Columbia University

Co-Founder

Sep 2015 – May 2018

- Accepted to three technical NASA challenges and featured in University's Fall 2016 magazine
- Winner of Zvi Galil Award for Improvement in Engineering Student Life in Spring 2017

Women in Computer Science, New York, NY, USA

President

Apr 2017 – May 2018

- Oversee initiatives and events to promote women in CS (dept. became 45% female in Fall 2017)

Corporate Chair

Apr 2016 – Apr 2017

Event Coordinator

Apr 2015 – Apr 2016

Columbia MakerSpace, Columbia University

Superuser

Apr 2016 – present

- Responsible for weekly office hours to teach students about prototyping and 3D printing skills

National Residence Hall Honorary, King's Crown Chapter, Columbia University

Inducted Member

Apr 2016 – May 2018

- Led and organized volunteer service activities in the greater NYC community

CONFERENCES / PRESENTATIONS

- 1) K. Balachandran, P. Cappuccio, J. Di, K. Doerksen, J. Fuchs, A. Gloder, R. Jolitz, M. Li, D. Limonchik, L. Massarweh, A. Meszaros, D. Naftalovich, E. Nathan, T. Peev, M. Rovira-Navarro, S. Santra. "SILENUS: A Mission Concept Investigating the Habitability of Enceladus." Poster at *51st Lunar and Planetary Science Conference*, Houston, TX, Feb 2020.
- 2) O. Kedar, C. Capper, Z. Chen, J. Di, et. al. "Spyndra: An Open-Source Proprioceptive Robot for Studies in Machine Self-Awareness." Poster presented at *Naval Academy Science and Engineering Conference*, Annapolis, MD, Nov 2017.
- 3) J. Di. "Towards Onboard Hypertemporal Imaging." Poster presented at *Lockheed Martin Intern Session*, Sunnyvale, CA, Aug 2017.
- 4) J. Di, C. Grohol, A. Kahn, and K. Waychoff. "Electrostatic Detainment Unit for Automated Removal of Debris in Orbit (EDUARDO)." Poster presented at *NASA Intern Session*, Huntsville, AL, Aug 2016.

GRANTS

- 1) NASA / NY Space Grant | "The CUbeSat Initiative: An Effort to Cultivate an Experiential Learning- Based Aerospace Program", I. Kymissis (PI). For \$10,000 over 1/3/2017 - 12/31/2017.

PRESS

- 1) Adam Piore, *Columbia News*, "Engineering Grad Sets Her Sights on Outer Space", May 2018
- 2) *SpaceRef*, "41 Undergraduate Women Selected as Brooke Owens Fellows", Feb 2018
- 3) Julia Carpenter, *CNN*, "How sexism in tech is affecting the female pipeline", Aug 2017
- 4) *Aviation Week*, "Twenty Outstanding Students Emerging As Aerospace Leaders". Feb 2017
- 5) *Columbia Engineering*, "Columbia Space Initiative Taking Engineering to Extreme New Places", May 2016

OUTREACH

2019	Geeky Girl Reality #STEMStories Feature (July) Generation Sci Invited research speaker (March)
2018	John Glenn Middle School Organized STEM Women Speaker Series (Sept - Dec) The Intrepid Sea, Air, and Space Museum Kid's Week Booth with CSI (Feb)
2017	NY MakerFaire Presenter with Columbia MakerSpace (Sept) The Intrepid Sea, Air, and Space Museum Kid's Week Booth with CSI (Feb)
2016	NY MakerFaire Presenter with Columbia MakerSpace (Sept) U.S. Space Camp Volunteer (Jun - Aug) Double Discovery Center Presenter with CSI (Mar) Columbia Splash Teacher with CSI (Mar) New York Hall of Science STEM Night Presenter (Feb)

HONORS AND AWARDS

Threshold Ventures Fellowship	Dec 2018
NSF Graduate Research Fellowship (<i>declined</i>)	Apr 2018
UC Berkeley Chancellor's Fellowship for Graduate Study (<i>declined</i>)	Mar 2018
UPenn Ganster Engineering Fellowship (<i>declined</i>)	Jan 2018
Brooke Owens Fellowship	Jan 2018
Dean's List , Columbia University	2014 – 2018
Tau Beta Pi , Columbia University	Oct 2017
Women in Aerospace Scholarship , Women in Aerospace Foundation	Aug 2017
King's Crown Leadership and Excellence Award , Columbia University	Apr 2017
National Residence Hall Honorary , Columbia University	Apr 2017
Aviation Week's Top 20 Twenties Laureate , Aviation Week Magazine	Dec 2016
SWE-NY Scholarship , SWE	May 2016
FCA Women in Engineering Scholarship , SWE	May 2016
Microsoft Scholar , Microsoft	Mar 2016
Kakehashi Program Fellow , Government of Japan and Columbia University	May 2015
Res. Inc., Program , Columbia University	Sep 2014 – May 2015
Raytheon Robotics Scholarship , Raytheon Company	Aug 2014, Jul 2016, Aug 2017
Gold Key , Scholastic Arts and Writing Competition	Jan 2013, Jan 2014

LICENSES & CERTIFICATIONS

Amateur Radio	
Technician Class	2016 – Present

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Society of Women Engineers , Chicago, IL, USA	2017 – Present
American Institute of Aeronautics and Astronautics , Reston, VA, USA	2016 – Present

LANGUAGES

Python • Julia • C++ • Verilog • VHDL • MatLab • \LaTeX • HTML • Java • LabView

SKILLS

3D Printing • Deep Learning • Git • Machine Learning • Microcontrollers • PCBs • Perception • Soldering