Julia Di

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EDUCATION

Stanford University, Stanford, CA, USA

Ph.D. in Mechanical Engineering (Robotics) Sep 2018 – Jun 2023

- NASA Space Technology Research Fellow (2018 - 2022)
- 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 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

Visiting NASA Space Technologist 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 Aeronautics and Astronautics (WoAA), in collaboration with AIAA

Vice-Chair — Oct 2019 – present

- Leads the 500+ members and 20+ chapters of WoAA, an official subcommittee of AIAA

Stanford GradSWE, Stanford, CA, USA

Board Member — Sep 2018 – May 2019

- 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

PUBLICATIONS

Conference Papers

1) J. Di. "From the Lab Notebook: Observations on Tactile Sensing for Robotic Manipulation." in *Robotics: Science and Systems (RSS), Robotics Retrospectives Workshop* Jul 2020.
2) 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." in *51st Lunar and Planetary Science Conference*, Houston, TX, Feb 2020.

Posters

1) O. Kedar, C. Capper, Z. Chen, J. Di, et. al. "Spyndra: An Open-Source Proprioceptive Robot for Studies in Machine Self-Awareness." Presented at *Naval Academy Science and Engineering Conference*, Annapolis, MD, Nov 2017.
2) J. Di. "Towards Onboard Hypertemporal Imaging." Presented at *Lockheed Martin Intern Session*, Sunnyvale, CA, Aug 2017.
3) J. Di, C. Grohol, A. Kahn, and K. Waychoff. "Electrostatic Detainment Unit for Automated Removal of Debris in Orbit (EDUARDO)." 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

2020	**DiscoverPhDs** Feature (July) **American Museum of Natural History** Virtual Guest Speaker for HS Interns (May)
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

Interact Fellowship	Apr 2020
Threshold Ventures Fellowship (Stanford Entrepreneurship)	Dec 2018
NASA Space Technology Research Fellowship (*accepted*)	Apr 2018
NSF Graduate Research Fellowship (*declined*)	Apr 2018
UC Berkeley Chancellor's Fellowship for Graduate Study (*declined*)	Mar 2018
UPenn Ganster Engineering Fellowship (*declined*)	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
Microsoft Scholar, Microsoft	Mar 2016
Kakehashi Program Fellow, Government of Japan and Columbia University	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

SOFTWARE

MatLab • Python • C/++ • Vim • Git • LaTeX • Julia • Verilog • Adobe InDesign • Adobe Photoshop

HARDWARE

3D Printing • Altium • Mechatronics • Microcontrollers • Printed Circuit Boards • SolidWorks • Soldering