

# Julia Di

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## EDUCATION

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### **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

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### **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

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### **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

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### **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

## CONFERENCES / PRESENTATIONS

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- 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

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- 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

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- 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

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

## HONORS AND AWARDS

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<b>Interact Fellowship</b>	Apr 2020
<b>Threshold Ventures Fellowship (Stanford Entrepreneurship)</b>	Dec 2018
<b>NASA Space Technology Research Fellowship</b> ( <i>accepted</i> )	Apr 2018
<b>NSF Graduate Research Fellowship</b> ( <i>declined</i> )	Apr 2018
<b>UC Berkeley Chancellor's Fellowship for Graduate Study</b> ( <i>declined</i> )	Mar 2018
<b>UPenn Ganster Engineering Fellowship</b> ( <i>declined</i> )	Jan 2018
<b>Brooke Owens Fellowship</b>	Jan 2018
<b>Dean's List</b> , Columbia University	2014 – 2018
<b>Tau Beta Pi</b> , Columbia University	Oct 2017
<b>Women in Aerospace Scholarship</b> , Women in Aerospace Foundation	Aug 2017
<b>King's Crown Leadership and Excellence Award</b> , Columbia University	Apr 2017
<b>National Residence Hall Honorary</b> , Columbia University	Apr 2017
<b>Aviation Week's Top 20 Twenties Laureate</b> , Aviation Week Magazine	Dec 2016
<b>SWE-NY Scholarship</b> , SWE	May 2016
<b>Microsoft Scholar</b> , Microsoft	Mar 2016
<b>Kakehashi Program Fellow</b> , Government of Japan and Columbia University	May 2015
<b>Raytheon Robotics Scholarship</b> , Raytheon Company	Aug 2014, Jul 2016, Aug 2017
<b>Gold Key</b> , Scholastic Arts and Writing Competition	Jan 2013, Jan 2014

## LICENSES & CERTIFICATIONS

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<b>Amateur Radio</b> Technician Class	2016 – Present
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## PROFESSIONAL AFFILIATIONS & ACTIVITIES

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

## SOFTWARE

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MatLab • Python • C/C++ • Vim • Git • L<sup>A</sup>T<sub>E</sub>X • Julia • Verilog • Adobe InDesign • Adobe Photoshop

## HARDWARE

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