Julia Di

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EDUCATION

Columbia University, New York, NY, USA
B.S. in Electrical Engineering | Minor in Computer Science Aug 2014 – May 2018
Cumulative GPA: 3.87 / 4.00 (Dean's List all semesters)
Courses: Classical Controls, Digital Signal Processing, Communication Systems, Advanced Programming (C/C++), Data Structures (Java), Circuit Analysis, Solid State Devices

RESEARCH EXPERIENCE

Creative Machines Lab, Columbia University
Undergraduate Research Assistant, Mechanical Engineering Department Sep 2016 – present
• Supervisors: Professor Hod Lipson, Joni Mici
• Built a 3D-printed quadruped with image recognition capabilities as a machine learning platform
• Programmed a deep learning neural network on a Raspberry Pi for image recognition

Sia Lab, Columbia University
Undergraduate Assistant, Biomedical Engineering Department Sep 2015 - Dec 2015
• Supervisors: Professor Samuel Sia, Ninna Rossen
• Designed a device through rapid prototyping to automate manufacture of a novel cell therapy
• Helped conduct mouse operations to test the procedure in vivo

Columbia Laboratory for Unconventional Electronics, Columbia University
Undergraduate Research Assistant, Electrical Engineering Department Jan 2015 – May 2015
• Supervisors: Professor Ioannis (John) Kymissis and Hassan Edrees
• Designed and constructed an ion sputterer to microfabricate thin-film bulk acoustic resonators

WORK EXPERIENCE

Lockheed Martin Space Systems, Sunnyvale, CA, USA
Electro-Optical Engineering Research Intern Jun 2017 – Aug 2017
• Developed algorithms on FPGAs for aerial realtime onboard image processing capabilities
• Conducted trade study to develop additional onboard processing capabilities for future research

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
• Developed electronics and control algorithms, and tested with air bearings on MSFC's flat floor

Carleton Laboratory, New York, NY, USA
Undergraduate Laboratory Assistant May 2015 – Aug 2015
• Machined hundreds of samples of novel composite structure for infrastructure use by client
• Analyzed and wrote 300+ pages of final report for client with graduate student project leader

PRESENTATIONS

1) 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.

2) J. Di. "Towards Onboard Hypertemporal Imaging." Poster presented at *Lockheed Martin Summer Intern Competition*, Sunnyvale, CA, Aug 2017.

3) J. Di, C. Grohol, A. Kahn, and K. Waychoff "EDUARDO: Electrostatic Detainment Unit for Automated Removal of Debris in Orbit." Poster presented at *NASA MSFC Summer Intern Competition*, 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.

SERVICE

Presented over 10 times on space engineering and robotics at: The Intrepid Sea, Air, and Space Museum (2016, 2017), New York Hall of Science (2016), Double Discovery Center (2016).

SELECTED LEADERSHIP EXPERIENCE

Columbia Space Initiative, Columbia University
Co-Founder and Co-President — Sep 2015 – Mar 2017
• Organizes keynote speaker events, workshops, and technical space projects for 60+ members
• Led cubesat team in 2015 - 2016 with Professor Ioannis (John) Kymissis
• 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 2015 – present
• Initiate and manage events with tech companies and startups to promote women in tech
• Create scholarships and mentorship programs to encourage women to stay within the department (department as a whole became 45% female in Fall 2017)

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
Member — Apr 2016 – present May 2018
• Leads and organizes volunteer service activities in the greater NYC community

Formula SAE (Knickerbocker Motorsports), New York, NY, USA
Electronics and Carbon Fiber Engineer — Sep 2015 – Sep 2016
• Design electronics, manufacture foam molds, and perform carbon fiber lay-ups
Vice President — Sep 2014 – May 2015
• Manage operations and logistics for 50-strong team building two race cars in single year
• Write, compile, and cross-check two 200-page extensive spending budgets of $60,000

HONORS

Tau Beta Pi, Columbia University — Oct 2017
• Recognized for scholarship (top fifth of class), integrity, breadth of interest, and unselfishness

King's Crown Leadership and Excellence Award, Columbia University — Apr 2017
•Recognized for implementing sustainable change and lasting impact on the campus community.

National Residence Hall Honorary, Columbia University — Apr 2017
•Membership by nomination only for leadership and vision on campus

Aviation Week's Top 20 Twenties Award, Aviation Week Magazine — Dec 2016
• Identified as next-generation leader in aerospace engineering research and development
• One of only 20 laureates selected from an international pool

Gold Key, Scholastic Arts and Writing Competition — Jan 2013, Jan 2014
The nation's most prestigious pre-collegiate art/writing competition (2,000 winners of 200,000).

AWARDS

Women in Aerospace Scholarship, Women in Aerospace Foundation — Aug 2017

SWE-NY Scholarship, SWE — May 2016

FCA Women in Engineering Scholarship, SWE — May 2016

Microsoft Scholar, Microsoft — Mar 2016

Orbital Sciences Full Scholarship, Orbital Sciences — May 2014

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Society of Women Engineers, Chicago, IL, USA
Student Member — 2017 – Present

American Institute of Aeronautics and Astronautics, Reston, VA, USA
Student Member — 2016 – Present

LANGUAGES

Python • C/++ • Verilog • VHDL • MatLab • LaTeX • HTML • Java • LabView

SKILLS

3D Printing • Amateur Radio • Cadence • FPGAs • Git • Microcontrollers • PCBs • Soldering