

# Sanja Kirova

## R&D Mechanical Engineer

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### EDUCATION

#### Columbia University School of Engineering & Applied Science

*Bachelor of Science. Mechanical Engineering*

James F. Parker Memorial Award (Mechanical Engineering Design Award)

New York, NY

Aug 2019 – May 2023

GPA: 3.5

### WORK EXPERIENCE

#### Physical Sciences Inc.

*Mechanical Engineer - Deployable Technologies*

Andover, MA

July 2023 - present

- Design, build, and test hardware for early-stage development of underwater power generating systems, vehicle cabin cooling prototypes, deployable RF antennas, and seals for high temperature applications.
- Contribute to monthly customer reports and proposals, and mentor a team of college students sponsored by PSI.

#### MIT Lincoln Laboratory

*Summer Research Program Intern*

Lexington, MA

June 2022 - August 2022

- Successfully developed a novel method of assembling opto-mechanical systems for space and other harsh environments.
- Followed the design process from theoretical calculation and simulations to developing and testing prototypes.

#### Mechanical Engineering Undergraduate Lab

*Work Study*

New York, NY

Jan 2022 - May 2022

- Restructured the mechanical engineering lab to accommodate rising student demand and inventory expansion.
- Created a functioning inventory system and developed a website to make resources more accessible.

#### Columbia University Creative Machines Lab - Prof. Hod Lipson

*Research Assistant*

New York, NY

May 2021 – July 2021

- Built and automated a weaving gantry to produce carbon fiber lattices in various patterns for material stress testing.
- Performed experiments to determine best substrate material, carbon fiber curing procedure, and weaving pattern.

#### Corvus Robotics

*Deployment Engineer*

Boston, MA

November 2020 – Jan 2021

- Set up and tested UV disinfection robots at client sites by mapping facilities and programming autonomous schedules.
- Supported clients virtually with troubleshooting and through entire set up processes.

### LEADERSHIP/PROFESSIONAL DEVELOPMENT EXPERIENCE

#### L'SPACE Mission Concept Academy

*Engineering Lead*

Virtual

Jan 2021 – May 2021

- Received mission development and proposal writing & reviewing training weekly from NASA scientists & engineers.
- Lead an engineering team in designing a space vehicle and payload to complete an atmospheric mission on Venus.

#### Columbia University Robotics Club

*President (2021 – 2022), Mechanical Engineering Lead (2020 – 2021)*

New York, NY

Sep 2019 – May 2023

- Designed, manufactured, and tested mechanical components for an underwater autonomous robot to clean the ocean.
- Designed mobility subsystems for excavation and delivery rovers for in-situ resource utilization on the moon.

#### Columbia University Formula Racing

*Vice President of Technical Operations (2022-2023), Treasurer (2020 – 2021)*

New York, NY

Sep 2019 – May 2023

- Designed, manufactured, and tested mechanical components for the brakes, suspension, accumulator, and dashboard systems of the IC engine and EV cars to build the fastest, most reliable, and safest Formula SAE competition vehicles.
- Built web infrastructure (web application, database, and wiki) to scale purchase requests and inventory management with minimal errors, improve the onboarding and recruitment process, and implement program management practices.

### SKILLS, AWARDS, & CERTIFICATIONS

**Skills:** SolidWorks (CAD), MATLAB, LabView, Python, C++, Rapid Prototyping, LTSpice, CIM, Technical Writing

**Design Challenges:** Mitigating Climate Change (2020), HackDuke IDEATE (EdTech runner up, 2020), Innovation Accelerator (2021), NASA Break the Ice Lunar Challenge (Runner-Up, 2021), NASA BIG Ideas Challenge (2022)