

PEDRO LEANDRO LA ROTTA

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EDUCATION

Columbia University New York, NY

Class of 2023

*Master of Science in Mechanical Engineering, **Concentration: Robotics and Control***

GEM Full Fellow

Massachusetts Institute of Technology Cambridge, MA

Class of 2021

Bachelor of Science in Mechanical Engineering

RESEARCH EXPERIENCE

Columbia University Creative Machines Lab

New York, NY

Graduate Research Assistant

Aug 2022 – Present

- Supported the development of the multi-material 3D printing project by designing, assembling, and testing 2 electromechanical subsystems of the printer
- Refactored and supplemented slicer code in MATLAB and Python, creating better user interfaces and debugging tools

MIT Department of Biological Engineering

Cambridge, MA

Undergraduate Research Assistant

March 2020 – Feb 2021

- Integrated Canonical Correlation Analysis, KNN clustering, and high-dimensional visualization tools to develop a new workflow for extracting insights from mouse single-cell RNA-seq data
- Identified 2 potentially novel genes implicated in the maintenance of the tumor microenvironment in mouse models of pancreatic cancer
- Presented findings at an NIH systems biology conference

PROFESSIONAL EXPERIENCE

Fermi National Accelerator Lab

Batavia, IL (remote)

Graduate Intern/GEM Fellow

Jun 2022 – Aug 2022

- Generated conceptual designs for a robotic workcell capable of fully automating the currently manual assembly of superconducting radio frequency cavities
- Produced CAD of system architecture and generated RoboDK simulations of key robot movements
- Interacted with field technicians, physicists, and management to define project requirements

Octant Bio

Emeryville, CA

Research Associate/Automation Engineer

Aug 2021 – Jun 2022

- Initiated early automation efforts by developing process diagrams, synthesizing technical requirements, and identifying potential automation projects
- Developed a new statistical framework for identifying “hits” in chemical screens, potentially reducing false discovery and false rejection rates
- Created process control tools in R and Python for the high-throughput screening team and used them to identify 3 significant data analytics issues

PERSONAL PROJECTS

- StreetEasy Scraper - I built a web scraper to notify me when new real estate listings are posted on StreetEasy; I used it to find the apartment I currently live in.

SKILLS AND LANGUAGES

- Software – Python, C++, MATLAB, R, Git, Arduino, Docker, Linux, SolidWorks, Fusion360, RoboDK
- Coursework – Evolutionary computation, mechatronics and embedded microcontroller design, fundamentals of programming, intro to statistical thinking, numerical methods for engineers, differential equations, statics, dynamics & control, and thermal-fluids engineering
 - o Spring 2023 coursework: computer vision, robot learning (deep learning for robot trajectory planning), machine learning, and robotics studio