

## EDUCATION

### Princeton University, NJ, USA

SEPT 2022 -  
CURRENT

#### PhD in Mechanical and Aerospace Engineering

- Researching collective behavior robotics algorithms for cooperative 3D surface inspection with applications for space inspection
- Advised by Professor Radhika Nagpal.
- [President's Fellowship](#) Recipient.

### University of Oxford, UK

OCT 2018 -  
JUNE 2022

#### Integrated Master's in Physics (MPhys) with First Class Honours

- Master's project in sampling-based incremental path planning for space applications. Specialization in *Lasers and Quantum Information Science* and *Biophysics*.
- Pembroke Award for Academic Community Building and Achievement (2022).
- Pembroke Scholarship for first class academic performance (2020 and 2021).
- 2020 Physics Prize for Physics Practicals - Awarded to top 5 students in the year.
- 2019 Prelims Prize for Physics Practicals - Awarded to top 3 students in the year.

#### Oxford Robotics and Additive Manufacturing Society (OxRAM), Oxford University

- **President** (MAR 2019 – MAR 2021):
  - Founded the robotics leg of the society and organized Oxford's first robotics competition.
  - Grew the society to 800+ members and single-handedly doubled the society's funding.
  - Opened Oxford's first open-access hackspace.
  - Co-led several robotics and 3D printing projects – stair-climbing robot, landmine detection robot, Christ Church 3D modelling project etc.
  - [Link to my published interview.](#)
- **3D Printed Robot Arm Project Leadership Team** (OCT 2020 – current):
  - Led the hardware assembly team and build a fully 3D printed 6-DOF robot arm.
  - Built a bilingual NLP module for voice command recognition.
  - Integrated arm with inverse kinematic solver.
  - Conducted a ROS Bootcamp course.
  - [Project Github.](#)

### American School of Warsaw, Poland

SEP 2014 -  
JUN 2018

#### IB diploma

Achieved 44 out of 45 in IB Diploma.

## WORK EXPERIENCE

### Ocado Technology, UK

JUL 2021 -  
SEP 2021

#### Technology Intern, Autonomous Mobility Team

- Built a full stack webapp using React and Spring to control and monitor fleets of autonomous vehicles remotely .
- Completed the core steps of the software development cycle from planning to implementation.
- Contributed designs and software that was used in the project's autumn live trial.
- Presented final product in front of an audience of 800+ people.
- Attended internal talks, gaining insight on Ocado's 2000+ multi-agent robotic 'Hive'.

#### Mobile Robotics Intern, 10x Team

JUL 2020 -  
SEP 2020

- Designed a Virtual Reality Platform to control mobile robots remotely.
- Produced a demo-ready product from scratch using OpenGL and ROS that used sensors like 360 Lidar, depth camera, and 360 camera.
- Presented final product in front of an audience of 800+ people

Devie, UK

JUN 2020 –

OCT 2020

## Data Scientist

- Developed and integrated a production-ready NLP model into the Devie framework for performing implicit intent and named-entity recognition.
- Presented future steps in the AI space to the CEO and CTO of the startup.

Ufonia, UK

JUN 2020 –

OCT 2020

## AI Research Intern

- Worked on solving the "Barge-in" problem i.e. modifying the telemedicine platform to handle user-interruptions robustly.
- Developed and demo-ed two solutions: a deep reinforcement learning method and spectrogram-based image recognition method (inspired by Shazam's sound detection system).
- Presented in weekly update meetings.

Brookhaven National Laboratories, USA

JUL 2019 –

SEP 2019

## Research Assistant Omega Group

- Analyzed performance of Low Gain Avalanche Diodes: silicon detectors designed for CERN ATLAS
- Collected measurements and, based on theoretical models, developed python algorithms to analyze the IV and CV curves and extracted key parameters like breakdown voltage and gain profile.
- Developed simulations in Geant4 (a C++ framework).
- Co-authored a conference paper.
- Presented data in two HPK meetings involving global ATLAS-affiliated lab groups.

Stony Brook University, NY, USA

JUN 2017 –

AUG 2017

## Simons Summer Research Fellowship Intern

- Mentored by Dr. Thomas Allison, investigated the effect of second and third order chromatic dispersion on ultrafast laser pulses for applications in high-speed lock-in spectroscopy.
- Collected spectroscopic data and wrote python algorithms to analyze the data
- Presented results in a poster session: [Lab Group Blog Post](#).

University of Warsaw, Poland

APR 2016 –

NOV 2016

## Research Intern

- Mentored by Prof. Wojciech Pacuski, performed an analysis of the optical properties of Molecular Beam Epitaxy (MBE) structures and assisted with the maintenance of the MBE machine

## PUBLICATIONS

G. D'Amen, W. Chen, G. Giacomini, S. Ramshanker and A. Tricoli, "Neutron detection with fast-timing LGAD," *2019 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)*, Manchester, United Kingdom, 2019, pp. 1-4, doi: 10.1109/NSS/MIC42101.2019.9060016.

## OTHER EXPERIENCE & SKILLS

### Entrepreneurship

- Finalist in Oxford Foundry Covid Rapid Solutions Builder – top 10 amongst 100+ teams. Pitched a robotic solution for cleaning public transportation vehicles. Judging panel included entrepreneurial experts like Biz Stone (co-founder of Twitter) and Evan Sharp (founder of Pinterest)
- Participant in 2018 and 2019 Idea Innovate Contest and AI Impact Weekend
- Member of the Oxford Foundry Student Advisory Board. Co-created entrepreneurship programs for the student community. Attended leadership seminars including a leadership bootcamp at the Royal Armed Forces training center

### Teaching and Outreach

- Conducted beginner training courses in laser cutting, 3D printing, electronics, and ROS for OxRAM members.
- Tutored high school students in Math and Physics.
- Created 3D printed interactive models of DNA for the local school

**Computer Programming** Python (7+ years' experience), Matlab, R, C/C++ (ROOT, Geant4, OpenGL),

HTML/CSS/JavaScript/React, Linux, Java

**AI/Deep Learning** several projects in NLP, Reinforcement Learning, and Computer Vision since 2018

**3D Modelling and 3D printing** Proficient in CAD, 3D printing hobbyist

**Robotics** Proficient in ROS (3+ years of experience), experienced with Arduino/Raspberry Pi, trained in operating laser cutters

