

Dhruv Srinivasan

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EDUCATION

B.S. Physics and B.S. Mechanical Engineering (Dual Degree)

Expected May 2025

University of Maryland, College Park

GPA: 3.93/4.00

- Honors College: Design Cultures and Creativity, Undergraduate Quantum Association

Qubit by Qubit Introduction to Quantum Computing

Expected April 2022

Womanium Quantum Computing Certification (QBronze)

Issued July 2022

SKILLS

Software: Qiskit & PennyLane (Quantum Computing), Python, Java, Arduino C, MATLAB, openProcessing

Design: Solidworks, Autodesk Inventor, EAGLE (PCB Design), Fusion 360, 3D Printing (FDM, SLA), Optics

TECHNICAL EXPERIENCE

Fearless Optics, Quantum Engineering and Technology Laboratory

College Park, MD

Undergraduate Quantum Computing Researcher

September 2022 – Present

- Developing a quantum circuit in **PennyLane** to accelerate a solution to distributed multi-agent convex optimization problems by leveraging quantum gates
- Assisting in setting up optical tables and taking measurements with oscilloscopes and waveform generators for nonlinear photonic experiments

Underwriters Laboratories Fire Safety Research Institute

Columbia, MD

Engineering Intern

June 2022 – August 2022

- Analyzed experimental data (STA and TGA) using **Python** and Pandas [here](#)
- Tripled sampling rate and accuracy of window breakage metrics using Python and **Arduino Hardware**
- Used **I2C and SPI protocols with Autodesk EAGLE** to design a custom, low wattage hygrometer
- Developed custom **PCBs** to measure firefighter heat exposure wirelessly during rescues, interfacing with Arduino Yun
- Machine and wire Data Acquisition Racks for large-scale fire tests with **National Instruments Hardware**
- Write technical reports with **LaTeX**, working collaboratively with **GitHub** and **Git CLI**

Terrapin Works Design Team

College Park, MD

Lab Manager, Rapid Prototyping Lab

January 2022 – Present

- Interact with clients to determine their design needs, project scope, and timeline
- Design and prototype an electromechanical cell for NIST capable of firing neutrons at a substrate
- Employ **additive (FDM, SLA)**, and **subtractive manufacturing (CNC, Laser Cutter)** techniques to process client orders and prototype project components
- Slice 3D Printer orders using PreForm (FormLabs), Cura, PrusaSlicer, Markeforge
- 3D Scan and model objects using ROMEO Absolute Arm and Artec LEO

Maryland Robotics Center Autonomous Micro Air Vehicle Team

College Park, MD

Lead DBVF Design Team Engineer

September 2021 – Present

- Responsible for a team of 10 in the development and manufacturing of a 15lb, 6ft diameter tailsitter drone capable of flying up to 150ft/s; placed 2nd in the VFS DBVF 2022 Challenge [here](#)
- Ensure components are optimized and structurally sound using **FEA and CBD**
- Model drone in **Solidworks** with technical drawings and CAM for manufacturing and design reports
- Assign sub-team member responsibilities, coordinating timelines with Analysis and Software teams
- Program **MATLAB** models for drone speed and current consumption to generate motor, battery, and electronic specification sheets

FIRST Robotics Competition Team 1727

Timonium, MD

Team Vice President

September 2017 – May 2021

- Design in a team of five the University of Maryland's 12lb combat robot for regional competitions
- Model robot in Solidworks, using FEA to examine and improve each subsystem
- Perform stress, strain, and torque calculations to define robot constraints and guide material selection

LEADERSHIP EXPERIENCE

Undergraduate Quantum Association @ UMD

College Park, MD

Director of Events

January 2022 – Present

- Responsible for hosting quantum technology events, weekly events team meetings, and timelines
- Lead quantum technology workshops for 40+ students with Startup Shell, Technica, and IBM Fall Fest
- Coordinate with Media and Treasury directors on advertising and funding events

UMD Department of Physics

College Park, MD

Outreach, Student Coordinator

September 2022 – Present

- Conduct multimedia acquisition for an 80+ tour of the University of Maryland Physics Department
- Instruct educational demos for elementary, middle, and high school visits
- Develop workshops to conduct in the Physics Vortex Makerspace

Ridgely STEM Summer Camp

Timonium, MD

Lead Instructor

July 2018 – Present (Summer)

- Created a comprehensive Introduction to 2D Game Design and Introduction to Aerospace Curriculum
- Taught these courses to 14 middle school aged students, along with 3D Printing and Intro Robotics
- Created video resources, educational maker kits and lesson plans for other camps to implement
- Collaborated with instructors on teaching strategy, class scheduling, and hybrid learning activities

Cromwell Valley Elementary Robotics Team

Towson, MD

Lead Mentor

September 2018 – May 2021

- Guided students through the Design Process and building fundamentals through the VexIQ platform
- Introduced and taught programming fundamentals through game design activities in Java
- Developed project-based activities and lesson plans for students to learn these concepts
- Progressed student interpersonal skills by preparing them for interviews and presentations at showcases

RELEVANT COURSEWORK

Mathematics

- Partial and Ordinary Differential Equations (PHYS 373, MATH 246)
- Linear Algebra (MATH 461)
- Multivariable Calculus, Calculus 2, Calculus 1 (MATH 241, 141, 140)
- Complex Analysis, Fourier Transforms and Series (PHYS 373)

Physics

- Quantum Mechanics 1 (PHYS401, taking Spring 2023)
- Experimental Physics 2: E&M Waves, Optics, Modern Physics (PHYS 375, taking Spring 2023)
- Modern Physics (PHYS373)
- Fields, Waves, Electricity & Magnetism (PHYS 270, 272, 273)
- Mechanics (PHYS 171)

Engineering

- Thermodynamics (ENES 232, taking Spring 2023)
- Statics 2 (ENES 220, taking Spring 2023)
- Statics 1 (ENES 102)
- Dynamics (ENES 221)
- Computer Aided Design (ENME 272)
- MATLAB (MATH 206)
- Object Oriented Programming 1 (CMSC 131)