

MAURICIO BARBA DA COSTA

(561) 699 7023 — barba@mit.edu — github.com/mercush

EDUCATION

Massachusetts Institute of Technology

Math and Computer Science (18C) and Finance (15)

Cambridge, MA

September 2020 – May 2023

- **GPA:** 5.00/5.00
- **Extracurricular Activities:** Software Development for the Harvard MIT Math Tournament, Undergraduate Math Association Social Chair

Florida Atlantic University High School

High School Diploma

Boca Raton, FL

August 2016 – May 2020

- **GPA:** 3.96/4 (unweighted) 5.43/6 (weighted)
- Took 100+ credits of coursework at Florida Atlantic University
- **Relevant Coursework at Florida Atlantic University:** Graduate-level Algebra, Topics in Topology, Research Topics in Measure Theory, Complex Analysis, Linear Programming and Game Theory, Classical Mechanics, Modern Physics
- **Extracurricular Activities:** Ross Mathematics Summer Program, Research in Tropical Geometry, Model United Nations (President), Quiz Bowl (Captain), Academic Games (President), Math Club (President and Founder),

EXPERIENCE

DBK 3D Printers—Co-founder

Software Development

Cambridge, MA

July 2021 – Current

- Designing software infrastructure for an MVP for a novel paradigm of 3D printers to be presented to accelerators to obtain seed funding

The Underline—Software Engineering Internship

Full Stack Developer

Miami, FL

June 2021 – Current

- Developing a social media platform and platform for scheduling events at one of the biggest urban development projects in South Florida with front-end in VueJS and back-end development in Heroku, Python, and MongoDB.
- Writing smart contracts for NFTs in solidity and deploying platform for NFT marketplace at the Underline

MIT Math Department—New Families of Dehn Invariant 0 Tetrahedra

Undergraduate Student Researcher

Cambridge, MA

February 2021 – May 2021

- Developing Python scripts to randomly generate tetrahedra and see if their edges and dihedral angles satisfied certain algebraic properties (using novel approaches from complex analysis and p-adic analysis) and deployed to AWS Elastic Compute.
- Devised proofs for the existence and nonexistence of Dehn Invariant 0 tetrahedra satisfying algebraic relations

MIT Media Lab—Space Sustainability Rating Project

Undergraduate Student Researcher

Cambridge, MA

September 2020 – January 2021

- Coauthor on STM Conference paper “Developing Detectability, Identifiability, and Trackability Analyses for the Space Sustainability Rating”
- Analyzed web-scraped data and orbital trajectories simulated by STK using MATLAB and the STK’s suite of data analysis tools

AWARDS

Jane Street In Focus Fellow — Two-time qualifier and 14th place (Finalist) team in the National Academic Championship — 3rd and 1st place team in Florida Commissioner’s Academic Challenge — 1st place Integral Bee winner at Florida Atlantic University — 2nd place team at the Max Planck Neuroscience Institute Brain Bee — Various Individual and Team Awards in the South Florida Academic Games Tournament