Juan F. Atehortúa

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EDUCATION

BOWDOIN COLLEGE
BA in Mathematics, Computer Science
May 2024 | Brunswick, ME
GPA: 3.881 / 4.0

RONALD REAGAN DORAL SENIOR HIGH
Grad. May 2020| Doral, FL
Immigrated from Colombia in 11th grade.
Chemistry Club Officer, Mu Alpha Theta tutor.
Graduated cum laude with 6 AP, 2 AS level, and 3 dual enrollment credits.

LINKS

Github:// **atehortuajf**
LinkedIn:// **atehortuajf**

COURSEWORK

UNDERGRADUATE
Mathematical Prin. of Machine Learning (Spring 2022)
Adv. Topics in Group Theory (Spring 2022)
Nature Inspired Computation
Intro. to Analysis
Intro. to Group Theory
Intro. to Math Reasoning
Computational Geometry
Foundations of Computer Systems
Algorithms
Linear Algebra
Data Structures
Multivariate Calculus

SKILLS

PROGRAMMING
Java • C • Python • Julia • C++ • MATLAB • Jupyter Notebooks • LaTeX

TUTORING
K-12 Math • Computer Science • HS Chemistry • Spanish • Standardized Testing (1510 SAT)

MISCELLANEOUS
Problem solving • Abstract thinking • Interpersonal communication • Troubleshooting • Basic networking

EXPERIENCE

BOWDOIN COLLEGE | Learning Assistant/Grader
Aug. 2021 - Present | Brunswick, ME
- Provide academic support to students taking Algorithms (CSCI 2200).
- Grading of assignments for Intro. to Mathematical Reasoning (MATH 2020).

VARSITY TUTORS | K-12 Tutor
Jun 2021 - Present | Virtual
- Instant (virtual) tutoring in mathematics, computer science, and standardized testing.

INDEPENDENT | K-12 Tutor
Sep 2019 - Mar 2020 | Doral, FL
- Worked both privately and as community service with my high school tutoring.

RESEARCH

SUMMER GEOMETRY INSTITUTE @ MIT | Research Fellow
July 2021 – Aug 2021 | Boston, MA
As a research fellow for the Summer Geometry Institute I had the pleasure to learn a lot of geometry processing techniques (differential geometry, optimization, numerical methods, etc.) which were applied to a myriad of interesting projects from professors and professionals which me and other fellows from around the globe worked on.
- Worked to extend, generalize, and improve an algorithm for the generation of higher-order triangle meshes that perfectly discretizes a curved 2D domain without geometric error. (Mentor: Prof. Campen - Osnabrück University, Peer: Foqia Shahid - Bryn Mawr College)
- Improved upon a plugin designed within the OpenFlipper framework to improve the quality of quadrilateral surface meshes in the plane. After SGI, we want to generalize the implementation for surfaces in 3D and hexahedral meshes. (Mentors: Prof. Bommes and Prof. Beaufort - University of Bern, Peer: Sidony O'Neal - Reed College)
- Reconstructed a 3D point cloud of the moon based on structure from motion from flickr images of the moon. From this, we used novel shape-fitting techniques (RANSAC) to fit an oblate spheroid to the point cloud. (Mentor: Prof. Snavely - Cornell University, Peers: Jonathan Mousley - Utah State University and Berna Kabadayi - Technical University of Munich)
- Implemented Schrödinger bridges over arbitrary triangle meshes for optimal transport between two density functions over the mesh. Introduced anisotropy to these bridges for increased control of the displacement while still conserving optimal transport. (Mentor: Prof. Solomon - MIT, Peers: Jonathan Mousley - Utah State University and Faria Huq - Bangladesh University of Engineering and Technology)

AWARDS

Year	Scope	Award
2021	Maine	Colby College DataFest Honorable Mention
2020	National	Questbridge National Match Scholar
2020	National	AP Scholar with Distinction
2019	National	NHRP National Hispanic Scholar