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Bradley M. Cardona

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Education

- **Allegheny College** — Meadville, PA
  Mathematics, B.S. (GPA: 3.55) — *Aug 2019 - May 2023*
  - **Courses**: Linear Algebra, Foundations of Mathematics, Vector Calculus and Variables, Probability/Statistic Inferences I, Probability/Statistic Inferences II, Optimization and Approximation, Algebraic Structures I, Introduction to Real Analysis, Complex Variables

Certificates

- **Data Analytics**: Ask Questions to Make Data-Driven Decisions, Foundations: Data, Data Everywhere, Prepare Data for Exploration
- **Machine Learning**: Supervised Machine Learning: Regression and Classification

Internships

- **Allegheny College Mathematics Department** — Meadville, PA
  Undergraduate Researcher — *May 2022 - Jul 2022*
  - Studied mathematics under the supervision of Professor Caryn Werner.
  - Explored systems of algebraic curves in the projective plane, a topic in algebraic geometry.
  - Solved equations and visualized graphs using Wolfram Mathematica and the Wolfram Language.
  - Presented my work to students and faculty at Allegheny College, as part of the ACRoSS seminar series.

- **Allegheny College Biology Department** — Meadville, PA
  Undergraduate Researcher — *Jun 2021 - Aug 2021*
  - Studied fruit flies under the supervision of Professor Bradley Hersh.
  - Attached green fluorescent proteins to several candidate DNA regions from fruit flies to identify biological switches by which a gene is turned on or off.

Software Projects

- **Personal website**: www.bcardona.com (for additional information and projects)
- **Pathfinding Visualizer**:
  - Built VanillaJS application for visualizing various search algorithms.
  - Implemented Depth-First Search, Breadth-First Search, A* Search, Greedy Best-First Search, and Dijkstra's algorithm.
  - Utilized: JavaScript, HTML, CSS, Git, GitHub
- **Sorting Visualizer**:
  - Built VanillaJS application for visualizing various sorting algorithms.
  - Implemented Bubble Sort, Heap Sort, Insertion Sort, Quick Sort, and Selection Sort.
  - Utilized: JavaScript, HTML, CSS, Git, GitHub
- **Sudoku**:
  - Built VanillaJS application for playing Sudoku.
  - Implemented four board difficulties: easy, medium, hard, and impossible.
  - Utilized: JavaScript, HTML, CSS, Git, GitHub
- **Portfolio Template**:
  - Built template using React to showcase recently updated GitHub projects.
  - Used Github's REST API to show automatically when update has been made to GitHub repository.
  - Utilized: ReactJS, Git, GitHub

Technical Skills

- **Proficient**: Python, JavaScript (ES6), SQL, Git, GitHub, Wolfram Mathematica, Wolfram Language, LaTeX, HTML5, CSS3, Unix, Visual Studio
- **Familiar**: React, C++