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Bradley M. Cardona

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Education

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

Certificates

- **Google Data Analytics Professional Certificate (2023)**: Developed an advanced understanding and proficiency of platforms for effective data analyses, including spreadsheets, SQL, R, and Tableau.
- **Machine Learning Specialization (2023)**: Studied supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning; learned some of the best practices for machine learning models; and gained practical skills to apply machine learning techniques.

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 of Allegheny College, as part of the ACRoSS seminar series.

Software Projects

- **Personal website**: www.bcardona.com (for additional information and projects)
- **Overpopulation Case Study** (Paper, Tableau, GitHub):
  - Conducted a study to explore the trends of average total fertility rates across large geographical regions from 1960 to 2021.
  - Concluded that most countries will need to address an underpopulation problem.
  - Utilized: R, Tableau, Excel, Git, GitHub
- **Deep Work Tracker** (GitHub):
  - Developed a Python project to track and record focused work activities, known as "deep work", to improve my productivity.
  - Implemented a CSV file-based system for logging daily accomplishments and a Python script for generating visualizations and a daily/monthly summary.
  - Utilized: Python, Pandas, Matplotlib, Seaborn, Git, GitHub
- **Pathfinding Visualizer** (Website, GitHub):
  - Developed an immersive JavaScript web application to visualize 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** (Website, GitHub):
  - Built an interactive JavaScript web application to visualize a range of sorting algorithms.
  - Implemented Bubble Sort, Heap Sort, Insertion Sort, Quick Sort, and Selection Sort.
  - Utilized: JavaScript, HTML, CSS, Git, GitHub

Skills

- **Languages**: Python, R, SQL, JavaScript, Git, LaTeX, HTML, CSS
- **Libraries/Frameworks**: TensorFlow, NumPy, Matplotlib, Microsoft Excel, GitHub, Git