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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, LaTeX, HTML, CSS
- **Libraries/Frameworks:** TensorFlow, NumPy, Matplotlib, Microsoft Excel, GitHub, Git