

# WILLIAM MCCALL

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[LinkedIn](#) | [GitHub](#)

## EDUCATION

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**Dartmouth College**, Hanover, NH **June 2023**  
**GPA 3.96/4.0**  
*Bachelor of Arts in Computer Science and Mathematics, Minor in Human Centered Design.*  
Relevant Coursework: Algorithms, Object Oriented Programming, Linear Algebra, Software Design, Discrete Mathematics  
Citations for academic excellence in Statistics, Machine Learning.

**Greens Farms Academy**, Westport, CT **June 2019**  
**GPA 3.95**  
Activities: Senior Class President, Varsity Soccer Captain, Track and Field Captain, Puzzle Team Captain.  
Honors/Awards: GLaD Prize for Creativity in Mathematics, High Honors, Head of School Distinction.

## WORK EXPERIENCE

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**Contextual Dynamics Laboratory**, Hanover, NH **May 2021-Present**  
*James O. Freedman Presidential Scholar Research Assistant, Stock Market Dynamics, Jeremy Manning*

- Wrote program to efficiently scrape market data from API to be stored and formatted in a dataframe.
- Applied statistical models used in lab for FMRI brain timeseries analysis on stock market price history to determine how price of different stocks are dynamically correlated.
- Contributed to Lab's goal of building a trading AI which uses higher order timeseries correlations to execute trading strategies. Research funded by the National Science Foundation.

**Dartmouth Computer Science Department**, Hanover, NH **March 2021 -Present**  
*Teaching Assistant, Object Oriented Programming*

- Directed weekly section meetings designed to reinforce principles of Object-Oriented Programming.
- Designed videos, animations, and graphs to help visualize algorithms, data structures, and runtime complexity analysis.
- Independently met with students for additional lessons, helping them to reach key academic goals.

## ADDITIONAL EXPERIENCE

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**Varsity Tutors**, Online **April 2020 -August 2021**  
*Lead Tutor*

- Rated among top 1% of tutors on the platform for client satisfaction, 100% 5-star reviews.
- Led 1000+ student Minecraft classes conducted over Zoom and Youtube.
- Taught algebra, college essay writing, programming, and Spanish to various clients.

**WeTutorCT**, Online **June 2020 - January 2021**  
*Founder*

- Self-taught HTML and CSS editing to create custom webpage with integrated booking and payment system.
- Helped over 30 individual clients achieve significant academic improvement across a wide array of subjects.

## PROJECTS

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- [PredictBot](#): Wrote a market API scanner which uses price data from prediction market PredictIt to search for a set of bets which are mathematically guaranteed to be profitable. Successfully identified arbitrage trades.
- [Chessboard Inductive Tiling problem](#): Created a custom animation rated top 5% of 1500 submissions in 3Blue1Brown Summer of Math Exposition competition. Received personal recognition from Grant Sanderson. Project animated in Maya.
- [Tiny Search Engine](#): Created package to crawl and index web pages and handle user queries. Project written in C.
- [Conic Sections and 4D parametrics](#): Understanding algebra, calculus, and parametrics through 3D cones. Written in Ruby.
- [Sudoku Solver](#): Randomly generates 9x9 sudoku puzzles and solves them using recursive DFS. Project written in C.
- [Remote Control Haptic Feedback Glove](#): Software written in C++; hardware 3D printed.

## SKILLS & CERTIFICATIONS

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**Computer:** Python, Java, C, C++, C#, Git, bash, iMovie, Maya, MakerBot Toolkit, C#, MATLAB.

**Interests:** Freestyle Skiing, Running, Prediction Markets, Mathematics, Piano, Investing, 3D printers, Puzzles, Chess, Poker.

**Certifications:** CITI Human Research Certification, Responsible Conduct of Research.

**Languages:** Spanish (fluent).