

Andrew Magid

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EDUCATION

Columbia University in the City of New York

New York, NY

Bachelor of Arts in Mathematics and Computer Science

September. 2019 – Present

- GPA: 3.72/4
- Relevant Coursework: Honors Mathematics A/B (proof-based calculus I-IV/Linear Algebra), Intro to Computer Programming (Java), Data Structures in Java, Advanced Programming (C, C++, Unix), Discrete Math, Abstract Algebra, CS Theory, Fundamentals of Computer Systems.
- Awards: John Jay Scholar, Columbia Core Scholar, Dean's List.

Glenbrook North High School

Northbrook, IL

High School Diploma

Aug. 2015-May. 2019

- GPA: 4.93/5. ACT: 35.
- Relevant Coursework: Glenbrook Academy of International Studies, BC Calculus, AP Biology, Honors Advanced Topics (Multivariable Vector Calculus/Linear Algebra Topics).
- Awards: William Simonsen Scholarship, Founder of GPS Science Club, AP Scholar, Honor Roll, National Honors Society, Illinois All-State Jazz Saxophonist, 3rd place Roberta Savler Piano Contest and NSMT Competition.

TEACHING EXPERIENCE

Teaching Assistant – College Algebra and Analytic Geometry

September. 2020 - May. 2021

Columbia University

New York, NY

- Host weekly problem sessions to explain and reinforce material through prepared examples.
- Hold online weekly office hours (for College Algebra and Calc I-III students).

Instructor, Audio Engineer

May. 2020 – Aug. 2020

Campanella Educational Center

Northbrook, IL

- Created music curriculum and developed lesson plans for children ages 3-11 and taught those respective courses over Zoom.
- Tutored English, Physics, and Chemistry for High School students.
- Mixed and mastered choir performances in Logic Pro X and Final Cut Pro X.

High School Private Tutor

May. 2020 - Present

Through Zoom

- Tutor High School students in English, Math, Chemistry, and Physics.
- Develop lesson plans for each student and prepare them for AP exams.

PROJECTS

[Investment Portfolio Management Application](#)

June. 2020 – Present

Java, Python, Bash, yFinance, Swing, JFreeChart, Gurobi Optimizer

With the limited number of formal opportunities due to COVID, I designed and developed a GUI investment portfolio management application.

- Automatically downloads historical prices for selected securities from Yahoo Finance.
- Calculates security monthly/annualized risk (st. dev) and return.
- Calculates security beta to assess its risk compared to the market benchmark.
- Displays graphical visualization of security historical data and returns.
- Calculates portfolio's annualized risk, return, and beta based on its asset allocation.
 - * Calculates covariances of security historical returns in order to compute portfolio variance.
 - * Allows user to load and save portfolio's asset allocation (security weights).
- Uses Gurobi optimizer to generate a graphical efficient frontier of optimal portfolios.

International Math Modeling Competition

February. 2021

Python, Gurobi Optimizer, Numpy, Pandas, Matplotlib, Simpy, Scipy, L^AT_EX

Wrote a [research paper and consulting letter](#) on the optimal distribution of aerial drones to fight Australian bushfires.

- Performed original research based on historical data of temperature, topography, and satellite bushfire events.
- Coded a Gurobi MIP maximum coverage model on Pandas dataframes to optimize distribution of drones.
- Created a pricing model for the purchase and maintenance of aerial drones.
- Implemented statistical regression models on Australian bushfire historical data.

Multi-Client Chat/Word Game

January. 2021

C, Sockets API, Ncurses

Created multi-user multi-threaded server/client applications using TCP/IP Protocol for chat or playing multi-player games.

- Uses ncurses for CLI gui with menu and multiple panels/windows.
- Ability to play a word game and chat using multiple threads.
- Wrote linked-list implementation for stored data.

Winning Submission for the Columba Core Scholar Competition | *Java, Processing*

May. 2020

Based on Odysseus's Trial in the Odyssey, this program is an interactive 'game' that visualizes Archimedes's method of exhaustion.

- Displays Area, Perimeter, Apothem, Side Length, and number of sides of a polygon and compares it to the parameters of the circle.
- Uses Newton's Mechanics of Motion and geometry for calculations and to determine if the player has achieved the goal.
- Different scenarios based on the selection, and allows the player to set the parameters of the game.

COMMUNITY SERVICE

Volunteer

July-August. 2017 (50 hours)

Alden of Long Grove Nursing and Rehabilitation Center

Long Grove, IL

- Played piano for patients in common areas and dementia units.
- Translated between Russian and English for patients, staff, and visitors for Russian-only speakers.
- Led dynamic morning exercises, entertainment activities such as bingo, and served meals.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, HTML/CSS, \LaTeX

Developer Tools: Git, Vim, Make, CMake, UNIX CLI, IntelliJ, PyCharm, CLion, VSCode, Arduino, Jekyll

Software: Microsoft Office, Final Cut Pro X, Logic Pro X, Autodesk Fusion 360/Inventor, Adobe Photoshop/Lightroom, Marlin Firmware, Slic3r, Cura

Libraries: Java Swing, JFreeChart, pandas, numpy, matplotlib, yFinance, Gurobi Optimizer, Processing, Ncurses, Threads, Sockets API

Spoken Languages: Native English Speaker, Fluent Russian, Advanced Spanish

Activities: Reboot the Earth/IvyHacks/Rehack Hackathons, International Math Contest in Modeling Competition, Jazz Saxophone