Matthew Yuan

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Education

Princeton University, Princeton, NJ — September 2017–May 2021 (Expected)
- Bachelor of Arts (A.B.) in Mathematics, 3.8 GPA.
- Coursework includes Macroeconomics, Algorithms and Data Structures, Probability and Stochastic Systems, Linear Algebra, Multivariable Calculus, Combinatorics, Real Analysis, and Fourier Analysis.

Coursera, coursera.org — May 2019–Present
- Machine Learning by Stanford University.

Skills

Programming Languages and Frameworks
- Java, Python, HTML/CSS, JavaScript, Node.js, Django, PostgreSQL, Bootstrap, Git, LaTeX.

Concepts
- Object-Oriented Programming, Machine Learning, Mathematical Reasoning, Teaching.

Languages
- English, Mandarin.

Experience

Algebraic Geometry Research, Princeton University — June 2019–Present
- Study Shafarevich's *Basic Algebraic Geometry 1* under Professor János Kollár.
- Meet weekly with Prof. Kollár as part of a 7-person research group.

Course Assistant, Princeton University — September 2018–May 2019
- Led weekly problem sessions for about 50 students in Real Analysis and Linear Algebra.
- Helped students understand complex mathematical ideas and guide students through homework problems.

Projects

Thue-Morse Connect Four, github.com/code-by-matt/tmc4online — October 2018–Present
- Built a variant of Connect Four to explore what happens when players take turns following the Thue-Morse sequence. Intended to eliminate the game's first-player advantage. See it at code-by-matt.github.io/connect4.
- Currently building a fully-featured version that will allow users to play each other online through WebSockets. Started work in Django, then transitioned to Node.js due its better compatibility with WebSockets.
- Uses HTML/CSS, JavaScript, Node.js, Python, Django, PostgreSQL, Bootstrap, and Git.

Seam Carving, class project — April 2019
- Implemented an image resizing algorithm in Java that preserves an image's content without cropping or stretching.
- Achieved by using Dijkstra's algorithm to find minimal-energy seams in an image.

Activities

Author in Princeton Undergraduate Research Journal, bit.ly/2W72vBR — Spring 2019
- Presented a creative, narrative explanation of Carl Friedrich Gauss's discovery that the regular seventeen-sided polygon is constructible using a compass and straightedge.
- Driven by curiosity and a desire to understand the real-world historical context of Gauss's work.
- 1 of 5 papers selected for publication out of 23 total submissions.

Editor of Profiles in Entrepreneurship, medium.com/profiles-in-entrepreneurship — October 2018–Present
- Manage a team of 4 writers for an intercollegiate publication that provides student entrepreneurs actionable advice from startup founders and VCs.
- Produced over 30 articles in the 2018–2019 school year.