Matthew Yuan

github.com/code-by-matt
my4@princeton.edu
609-216-0038

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, Express, Socket.io, Django, PostgreSQL, Bootstrap, Git, LaTeX.
Concepts
  – Object-Oriented Programming, Machine Learning, Mathematical Reasoning, Teaching.
Languages
  – English, Mandarin.

Experience

Algebraic Geometry Research under Professor János Kollár, Princeton University   June 2019–Present
  – Study the connection between ideals of polynomial rings and algebraic varieties in affine and projective space.
  – 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/tmc4node   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 new version that will allow users on two different devices to play each other in real-time. Started work in Python/Django, then switched to Node.js/Express with Socket.io.
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.