

Marc Andrew Choi

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EDUCATION

University of California, Los Angeles

Bachelor of Science in Mathematics with Specialization in Computing

Los Angeles, CA

Expected March 2023

- GPA: 3.82
- College Honors
- Dean's List

RESEARCH EXPERIENCE

Gang Reduction

June 2022 – Aug 2022

UCLA CAM REU under Dr. Andrea Bertozzi

Los Angeles, CA

- Created and implemented various Dynamic Mode Decomposition and Natural Language Processing Algorithms (DMD/NLP) to human survey time series data to analyze trends in child development
- Research Paper submitted and accepted to IEEE International Conference on Big Data Workshop 2022

Model of Prion Diseases

April 2022 – June 2022

Math 199 under Dr. Michael Lindstrom

Los Angeles, CA

- Created a robust model that predicts the growth rate of Prion Diseases in human brains with asymptotic analysis

A Novel Model of Fluidity within Homeless Populations

Oct 2021 – Dec 2021

Math 199 under Dr. Michael Lindstrom

Los Angeles, CA

- Created a robust model that predicts the exit and entry rates of the homeless population using multithreading

INDEPENDENT STUDY

Graph Theory | *Directed Reading Program*

April 2022 – June 2022

- Worked through sections of Proofs from THE BOOK by Martin Aigner and Gunter M. Ziegler

Category Theory | *Dr. Jonathan Rubin*

June 2021 – Aug 2021

- Worked through chapters 1-2 of Category Theory in Context by Emily Riehl

Spectral Theory | *Directed Reading Program*

Jan 2021 – March 2021

- Worked through sections 1-5 of Spectral Methods in Matlab by Lloyd N. Trefethen

RELEVANT COURSEWORK

Differential Equations

- MATH 134: Linear and Nonlinear Systems of Differential Equations
- MATH 135: Ordinary Differential Equations
- MATH 266A: Applied Ordinary Differential Equations (Graduate)
- MATH 266B/C: Applied Partial Differential Equations (Graduate)

Numerical Analysis

- MATH 151A/B: Applied Numerical Methods
- MATH 269A/B/C: Advanced Numerical Analysis (Graduate)

Probability and Statistics

- MATH 170E: Introduction to Probability and Statistics: Part 1 Probability
- MATH 170S: Introduction to Probability and Statistics: Part 2 Statistics

Analysis

- MATH 131A/B: Real Analysis
- MATH 132: Complex Analysis

Algebra

- MATH 110AH/BH/C: Algebra (Honors)
- MATH 115AH/B: Linear Algebra (Honors)

Computing

- MATH 156: Machine Learning
- MATH 164: Optimization
- MATH 168: Introduction to Networks
- MATH 180: Graph Theory
- MATH 182: Algorithms
- MATH 270A: Mathematical Aspects of Scientific Computing: Techniques of Scientific Computing (Graduate)
- MATH 270B: Mathematical Aspects of Scientific Computing: Numerical Linear Algebra (Graduate)
- MATH 273A: Optimization and Calculus of Variations: Basic Optimization Theory (Graduate)
- MATH 273B: Optimization and Calculus of Variations: Calculus of Variations (Graduate)
- PIC 10B: Intermediate Programming (C++)
- PIC 16A: Python with Applications I
- PIC 16B: Python with Applications II
- PIC 40A: Introduction to Programming for Internet

Miscellaneous

- Math 106: History of Mathematics
- Math 120A: Differential Geometry
- Math 174E: Mathematics of Finance for Mathematics/Economics Students

COMMUNITY & LEADERSHIP

Delta Sigma Pi Business Fraternity

March 2020 – Present

Former Chancellor and Vice President of Scholarship and Awards

Los Angeles, CA

- Hosted recruitment events each quarter and presided over new membership deliberation process
- Created study-buddy system within the Fraternity to ensure members have at least 1 friend in each class
- Coordinated Diversity Recruitment Initiative to increase the acceptance of underrepresented applicants by 200%

MC2UCLA Mentor

Sept 2021 – Present

University of California, Los Angeles

Los Angeles, CA

- Mentored 5 students from Moorpark College and created 2 year plans to increase likelihood to transfer to UCLA

UMSA Mentor

Sept 2022 – Present

University of California, Los Angeles

Los Angeles, CA

- Mentor 9 undergraduate mathematics students academically and professionally
- Facilitate various open studying sessions where mentees received help on various homework assignments
- Spearhead social events to strengthen relationships within the undergraduate mathematics community

MISCELLANEOUS

Math Course Grader

March 2021 – Present

University of California, Los Angeles

Los Angeles, CA

- Fall 2022: Math 33A: Linear Algebra and Applications
- Summer 2022: Math 33B: Differential Equations & Math 115A: Linear Algebra
- Spring 2022: Math 115A: Linear Algebra & PIC 40A: Introduction to Programming for Internet
- Winter 2022: Math 61: Introduction to Discrete Structures
- Fall 2021: PIC 16A: Python with Applications I & PIC 40A: Introduction to Programming for Internet
- Summer 2021: Math 61: Introduction to Discrete Structures & Math 115A: Linear Algebra
- Spring 2021: PIC 40A: Introduction to Programming for Internet

Independent Tutor

Sept 2016 – Present

Various Locations

Various Locations

- Instruct and mentor high school students 15-20 hours a week
- Create practice exams and worksheets for Precalculus, AP Calculus AB/BC, Multivariable Calculus, AP Statistics, and Discrete Mathematics

TECHNICAL SKILLS & INTERESTS

Languages: C++, MATLAB, Python, R, Julia, Javascript, PHP, \LaTeX

Interests: San Antonio Spurs, Settlers of Catan, Piano, Rick and Morty, Cooking, Traditional Chinese Medicine