Dominick Joo

(213) 407-6262
dominickijoo@gmail.com
dominickjoo.github.io

Education

2022 **Brown University**, *B.Sc. Candidate, Mathematics*, GPA 4.0.
- Undergraduate: Machine Learning, Computer Systems, Data Structures and Algorithms, Intro Software Engineering, Number Theory, Graph Theory, Functional Analysis
- Graduate: Algebra I and II, Algebraic Topology I and II, Algebraic Geometry I, Real Analysis I

Technical Experience

December 2020 **AuxPad**, *Software Engineering Intern*.
- Used React.js in development of notetaking application
- Implemented a fuzzy text-search component and easy-to-test scoring library

Summer 2020 **Independent Mathematics Research**.
- Investigated questions in low-dimensional topology, advised by Bena Tshishiku
- Translated problems from geometry into tractable group- and number-theoretic computations in Python
- Used data from Python scripts to formulate and prove upper and lower bounds on the number of invariant circles of surface automorphisms (see Projects)

Projects

Star Battle - Used Python Tkinter to make a solver and GUI for the logic puzzle Star Battle

topology.py - Developed open-source library for interacting with the data structures in research related to invariant circles of surface automorphisms

Teammate Hunt - Implemented the webpages for several interactive puzzles; expected to release October 2021 (over 500 teams expected to participate)

Teaching Experience

Summer 2021 **Summer Science Program**, *Teaching Assistant*.
- Mentored 36 high school students learning Python for a research project in astronomy
- Coordinated logistics and student activities

Summer 2020 **Euler Circle**, *Teaching Assistant*.
- Facilitated problem discussion sessions around higher mathematics for high schoolers
- Individually mentored ten students, reviewing and providing feedback on their homework and final papers

Fall 2019 - Present **Brown Math Department**, *Teaching Assistant*, Multivariable Calculus/Topology/Graph Theory.
- Led weekly problem-solving and discussion sections
- Assisted with curriculum and exam design by evaluating student understanding and writing problems

2018 - Present **MIT Educational Studies Program**, *Instructor*.
- Developed interactive classes in higher mathematics, physics, and behavioral economics for middle and high school students

2013 - Present **Private Tutor**.
- Taught over 50 elementary through college level students competition math and physics by curating problems and eliciting student thinking

Achievements and Awards

2021 Google Code Jam Round 2 Qualifier

Skills

Programming: Python, C, Javascript, React, Java, Scala, Git

Languages: Korean (native), Spanish (intermediate), Chinese (intermediate)