

Daniel Yoontae Hwang

SOFTWARE ENGINEER · MATHEMATICIAN · EDUCATOR

✉ dhwang48@gatech.edu | 🏠 sites.gatech.edu/danielyhwang | 🗣️ whydaniel | 🌐 daniel-yoontae-hwang

Education

Georgia Institute of Technology

Atlanta, Georgia

PH.D. IN MATHEMATICS

Aug. 2022 - Present

- First-year graduate student and Graduate Teaching Assistant for the Math Department.

Duke University

Durham, North Carolina

B.S. IN MATHEMATICS AND COMPUTER SCIENCE

Aug. 2018 - May 2022

- Cumulative GPA: 3.864
- Received a 4-year full-tuition scholarship as the top scorer in the North Carolina Comprehensive Contest.

Experience

The Social Institute

Durham, NC

DEVELOPER INTERN

May 2021 - Aug. 2021

- Performed comprehensive QA review; wrote detailed feedback and bug reports on their platform promoting healthy social media use.
- Communicated with the Marketing department; contributed to a website advertising their annual summit.

WoTo

Durham, NC

BACKEND ENGINEER

May 2020 - Jan. 2021

- Contributed to the backend of WoTo, a web app designed for scheduling and holding office hours.
- Created and tested new endpoints on the backend Express API, restructured a MongoDB database to improve user functionality.
- Notable contributions include a dynamic question template, join/leave functionality, and data filtering based on user type.

4th Medical Group, Duke Phoenix Project

Goldsboro, NC

MOBILE DEVELOPER INTERN

May 2020 - August 2020

- Implemented a redesigned prototype of 4th Medical Group's mobile application using React Native.
- Lead engineer on navigation menu allowing users to switch between different screens, along with a news screen and directory screen.
- Advised other developers with React Native, organized peer programming sessions.

Research and Academic Experience

Backend Head Teaching Assistant for Data Structures and Algorithms

Durham, NC

DUKE COMPUTER SCIENCE DEPARTMENT

Aug. 2019 - May 2022

- Configure and maintain the autograder, starter code, and JUnit test code for Java projects on GitLab and Gradescope.
- Troubleshoot assignments, student submissions, and students' use of programming tools, as needed.
- Lead weekly discussions and office hours. Guide small groups through short exercises; encourage familiarity with Java and algorithms.

PRUV 2021 Fellow and Independent Researcher

Durham, NC

DUKE MATH DEPARTMENT | ADVISOR: DR. MARGARET REGAN

May 2021 - May 2022

- Currently researching the set of solutions to a parameterized system corresponding to the steady states of the ERK biochemical network for various combinations of parameters.
- Utilized homotopy continuation via Bertini to find the pseudo-witness set points of the discriminant locus, separating the parameter space into distinct regions yielding the same number of real solutions.
- Implemented MATLAB code that repeatedly samples over a 2-dimensional subspace of the parameterspace to generate the discrete set of pseudo-witness set points for a given parameterization.

DOMath 2019 Researcher

Durham, NC

DUKE MATH DEPARTMENT | ADVISORS: PROFS. THOMAS WITELSKI AND JEFFREY WONG

May 2019 - July 2019

- Modeled the motion of a slider on top of a body of fluid as a MATLAB simulation using differential equations from fluid dynamics.

Skills

Programming	Java & JUnit, LaTeX, Node.js, MongoDB, SQL, MATLAB, Python
Web	Express with Mongoose and Node.JS, React and React Native, Django with Python, HTML5 with Bootstrap
Tools	Git, Postman, Visual Studio Code, IntelliJ