

# Nayeong Kim

## Education

**Sep 2024 - Aug 2029 (Expected)**

UC Santa Barbara, PhD in Mathematics

**AUG 2021 - DEC 2023**

San Francisco State University, MA in Mathematics

**MAR 2016 - AUG 2021**

KAIST, BS in School of Computing, Double major in Mathematical Science

## Research

**FEB 2023 - DEC 2023**

**Thesis**, San Francisco State University

*with Professor Federico Ardila-Mantilla*

Title: Degrees of Tropical Root Surfaces of Classical Root Systems.

**SEP 2020 - MAR 2021**

**Individual Study**, KAIST

*with Professor Ji Oon Lee*

Studied random matrices and their applications in community detection. Implemented graph simulation using block stochastic model and symmetric block stochastic model and community detection following the paper *A simple SVD algorithm for finding hidden partitions*, Vu, 2014.

## Teaching

**Sep 2024 - Now**

**UC Santa Barbara**, Santa Barbara, California, United States

*Teaching Assistant* TAing Math 34A in Fall 2024, Math 4B Differential Equation in Winter 2024 - Spring 2025.

**Feb 2023 - Jun 2024**

**San Francisco State University**, San Francisco, California, United States

*Teaching Assistant* Grading Math 850 Graduate Algebra in Spring 2024. Grading Math 435/735 Modern Algebra 2 and Math 881 Matroid Theory in Fall 2023. Grading Math 420/720 Combinatorics and Math 350 Geometry in Spring 2023.

## Experience

**May 2024 - Aug 2024**

**CryptoLab**, Seoul, Korea

*Research Intern* Benchmark Homomorphic Encryption Machine Learning models including HEaAN-SDK.

**MAY 2022 - AUG 2022**

**Meta**, Burlingame, California, United States

*Software Engineering Intern* In the VR Media Team, I worked on a project focused on streaming immersive videos that align with the user's viewpoint. I optimized data size by assigning varying weights to different directions within the videos.

**DEC 2020 - MAR 2021**

**Moloco**, Seoul, Korea

*Software Engineering Intern* While on the Cloud Backend Team, I worked on a project that location-targeted ads based on limited user information. As a side project, I also contributed to the internal cloud API.

**JAN 2020 - FEB 2020**

**Google**, Seoul, Korea

*Software Engineering STEP Intern* On the Android Media APIs Team, I developed a shadow library for the Android Media router to expedite testing.

## Talks

**Nov 28, 2023**

**AGC Seminar** *San Francisco State University*

Presentation about Tropical Surfaces of Root Systems with Alexander Low Fung. Result with Ardila-Mantilla, Cordero-Aguilar, McMillon. About the degree and tropical laplacian of tropical root surfaces.

## Awards and Scholarships

**Fall 2022**

- **Robert William Maxwell Scholarship** : SFSU scholarship for graduate students in the College of Science & Engineering.
- **L.A. Chang Memorial Mathematics Scholarship** : Mathematics Department scholarship.
- **David Meredith and Friends Scholarship** : Mathematics Department scholarship.

**Fall 2019 - Spring 2021**

- **Samsung Research Scholarship** : For undergraduate research.

**Fall 2019 - Spring 2020**

- **Women Techmakers Scholarship** : 2019 APAC WTM Scholar. Formerly the Google Anita Borg Memorial Scholarship Program.