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Tyler James Haina Ikehara

Fourth year PhD Candidate whose research interests include Wireless Communications, Electromagnetics, and RF Circuits. Passionate about learning and teaching others about STEM related topics.

Education

Doctor of Philosophy: Electrical Engineering **Graduation Year: 2027**

PhD Candidate | **Advisor: Dr. Thomas Marzetta**

University of Maryland College Park – College Park, MD

Doctor of Philosophy: Electrical Engineering **Graduation Year: 2027**

Future Leader Fellow | **Advisor: Dr. Thomas Marzetta**

New York University Tandon School of Engineering – Brooklyn, NY

Relevant Classwork: Linear Systems Approach to Wave Propagation, Probability and Stochastic Processes, Applied Matrix Theory, Machine Learning, Optimization Methods, Digital Signal Processing, Digital Communications, Electromagnetics, Wireless Communications, Linear Algebra I

GPA: 3.945

Bachelor of Science: Electrical Engineering, Minor – Music **September 2018 to June 2022**

Summa Cum Laude | *Electrical and Computer Engineering Academic Excellence Award*

Santa Clara University – Santa Clara, CA

Relevant Classwork: Microwave Circuit Analysis, Intro to Communication Systems, Electromagnetics I&II, Linear Algebra, Probability and Statistics, Multivariable Calculus

GPA: 3.976

Research Experience

Conference Talk | Advisor: Dr. Thomas Marzetta **October 2025**

2025 Asilomar Conference on Signals, Systems and Computers – Pacific Grove, CA

- Presented a talk as first author titled "The Radon Transform, True Time Delay Beamforming, and Ultra-Wideband Antenna Arrays"
- Proposed a Radon Transform approach to remove far-field signals received by an Ultra-wideband antenna array in the FR3 band

Research Project | Advisor: Dr. Thomas Marzetta **September 2022 to Present**

New York University Tandon School of Engineering – Brooklyn, NY

- Researched and proposed a novel electromagnetic feedback receiver array antenna system inspired by the human cochlea
- Used linear system theory to use impedance matrix calculations to understand the linear behavior of the proposed system

Research Intern **June 2021 to August 2021**

Naval Information Warfare Center Pacific – San Diego, CA

- Investigated the effectiveness of Direct Antenna Modulation and Cryocooled circuit components for High Frequency antenna systems
- Part of the Naval Research Enterprise Internship Program

Senior Design Project | Advisor: Dr. Kurt Schab **August 2021 to June 2022**

Santa Clara University – Santa Clara, CA

- Constructed a Radio Telescope using a Software Defined Radio as the main data processing component
- Designed a Microstrip Bandpass Filter for the Radio Astronomy frequency band of 1420 MHz

Guided Research | Advisor: Dr. Kurt Schab **July 2020 to August 2021**

Santa Clara University – Santa Clara, CA

- Researched Software Defined Radios and gained experience using GNU Radio
- Implemented a MATLAB script to compare the Signal to Noise Ratio for antennas with varying efficiency and Q-factor

Work Experience

Summer Intern **June 2025 to August 2025**

Jet Propulsion Laboratory/California Institute of Technology – Pasadena, CA

- Worked on converting simulation models of the Deep Space Network (DSN) downlink receivers from old software to Simulink
- Part of the 333E - DSN Communication Ground Systems: Telecommunications Signal Processing group

Graduate Assistant **September 2024 to Janurary 2025**

New York University Tandon School of Engineering – Brooklyn, NY

- Assisted with grading an undergraduate Linear Systems class
- Created quiz and homework solutions and held weekly office hours

Peer Educator **March 2022 to June 2022**

Santa Clara University – Santa Clara, CA

- Assisted with the Lab section of a Digital Signal Processing class
- Answered questions that the students had and ensured that their MATLAB codes were completed correctly

Student Tutor **September 2019 to March 2020**

Santa Clara University – Santa Clara, CA

- Math Learning Center Peer Tutor – Student Tutoring Program for math at SCU
- Ran weekly study groups for students and held one on one tutoring sessions

Financial Modeling Intern **June 2019 to September 2019**

Ekahi Health – Honolulu, HI

- Worked directly with Robert Walker, the Director of Ekahi Wellness
- Created financial models to provide strategies for a Team Based Care collaborative project between Ekahi Wellness and Central Medical Clinic

Peer Tutor **September 2017 to June 2018**

Punahou School – Honolulu, HI

- Tutored students in various subjects with an emphasis on Math and Science
- Assisted teachers during lecture sessions and lab experiments

Skills

Programming: C/MATLAB/Simulink/SCPI/SPICE/GNU Radio/Python/LaTeX/ADS/HFSS

Hardware: Microwave Antenna Equipment, Arduino, Soldering, Software Defined Radio, Analog Computers

Awards/Achievements

SCU Electrical and Computer Engineering Academic Excellence Award **June 2022**

SCU Senior Design Best in Session Presentation **June 2022**

Tau Beta Pi – California Charter Inductee **November 2020**

SCU Dean's List **2018-2021 School Years**

Volunteer Work

Trained SCU mentor for the Mentor Collective Program

Assisted Santa Clara University's Math department by interviewing applicant professors.

Volunteer at Sacred Heart Community Service Food Pantry

Punahou Carnival – Food Supply Booth Chair - Managed students and volunteers to keep food booths supplied. The Punahou Carnival is a 2-day scholarship fundraising event that grosses over $2 million dollars annually.