NIKI AMINI-NAIENI

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EDUCATION

University of Oxford *2021-2022*
Cornell-Oxford Visiting Students Programme, St. Anne's College
Mathematics & Computer Science Course

Cornell University *2017-2022*
B.S., College of Engineering
Major: Computer Science, Minor: Mathematics
GPA: 4.19 *(all A+s & As)*
Rose Scholars Program, Women in Computing at Cornell (WICC)

PUBLICATIONS

A Novel Method for Rapidly Computing the Array Factor of Phased Array Antennas
Patent Filed (June 30th, 2021) - Amazon, Project Kuiper • Role - Primary Inventor

HONORS & AWARDS

Acceptance into Cornell, Maryland, Max Planck Pre-doctoral Research School
Invited to and attended selective program to learn about state-of-the-art computer science research from internationally leading scientists.

National Betty Stevens-Frecknall Scholarship
Awarded merit scholarship for academic and extracurricular achievements in technology.

Frank W. and Emily Wood Scholarship
Awarded merit scholarship toward studying abroad at the University of Oxford.

D.E. Shaw Discovery Fellow
Awarded fellowship for strong academic record, history of achievement, and demonstrated curiosity.

BlackRock Fast-Track to FinTech
Based on performance in coding challenges and video interview, was accepted to onsite interactive workshop and accelerated interview program for technology-related summer internship opportunities. Was offered a software engineering internship position for summer 2020.

Cornell University Dean's List

Tau Beta Pi Engineering Honor Society Member

RESEARCH & TECHNICAL EXPERIENCE

Advanced Software Tool Developer September 2020 - July 2021
Amazon, Project Kuiper - Research & Development *Redmond, Washington*

Created intelligent robotic arm system for phased array antenna calibration and measurements using computer vision techniques and robotics software library developed during previous internship. This system learns the phased array under test through a short (few minutes) teaching process requiring a single annotated image. After this teaching phase, vision system robustly detects the phased array learned in new, varying images and guides the 6-axis robotic arm to all requested antenna elements on the detected phased array's surface. Also served as an expert on previous software-related developments.

Advanced Software Tool Development Intern June 2020 - August 2020
Amazon, Project Kuiper - Research & Development *Redmond, Washington*

Using 6-axis robotic arm, created mmWave systems utilized for the calibration and measurement of Kuiper's customer terminal antenna. To more closely integrate these systems into the Antenna Team's work, developed custom robotics software library used extensively by the Kuiper Team to design innovative phased array antenna calibration algorithms and tests.

Advanced Software Tool Development Intern June 2019 - August 2019
Amazon, Project Kuiper - Research & Development *Bellevue, Washington*

Invented a software engine using novel mathematical techniques for the rapid analysis and synthesis of phased array antenna beamforming. This novel engine is 2-3 orders of magnitude faster than off-the-shelf versions. I am the primary inventor on the Amazon patent for this invention.

Software Tool Development Intern May 2018 - August 2018
SpaceX, Starlink - Development *Redmond, Washington*

Developed new software tool that completely automates the initial via transition design process, significantly reducing the time required to design and simulate via transitions (reduces hours to a few minutes). Furthermore, this tool allows antenna engineers to add design components they were previously unable to add without significant effort. Created wireless communication system that allows users to remotely control and monitor a signal generator and spectrum analyzer in real time. Development required extensive programming, user interface design, and creating electrical interfaces between the systems.

TEACHING & MENTORSHIP EXPERIENCE

Foundations of Artificial Intelligence (CS 4700) January 2020 - May 2020
Teaching Assistant *Cornell University*

Held office hours to help students understand course material. Graded and provided feedback on students' problem sets.

Code in Place April 2021 - May 2021
Section Leader *Stanford University*

Prepared short lectures and problem solutions for and led weekly discussion section of students learning Python together through Stanford's CS106A course.

Odyssey Mentorship Program February 2021 - Present
Mentor *Odyssey Community*

Mentoring underrepresented undergraduate students as a professional. Help with career path development, build meaningful relationships with mentees, and provide resume, academic, and general advice for students interested in STEM (science, technology, engineering, and math) careers.

WICC Mentorship Program March 2020 - January 2021
Mentor *Cornell University*

Mentored undergraduate freshman and sophomore students through weekly meetings and additional programs for professional and academic development organized by my co-mentor and I. Provided guidance for prospective students unable to visit campus due to pandemic.

TECHNICAL SKILLS

Programming Languages Python, Java, MATLAB, VBA, OCaml, C, Julia, R, URScript.
Other Software LaTeX, Jupyter Notebook, CST Microwave Studio, Logism.

HOBBIES

Spoken Word Poetry *(ECET2 conference performer)* • Magazine Article Writing *(wrote 12 health-related articles on restaurant reviews, recipes, and personal endeavors published in 12 issues of local magazine)* • Blogging *(Rawcoco)* • Fitness *(International National Guard Planking Record - trained to hold forearm plank for over 2 hours)*