Kelvin Ma

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Ambitious student leader with a passion for learning. Seeking to apply skills cultivated from years of demanding team - oriented research in artificial intelligence, quantum computing, networking, and machine learning to solve modern software and computer engineering challenges. Seeking to utilize strong interpersonal and technical skills gained from various engineering leadership positions.

EDUCATION

CUNY City College of New York – Grove School of Engineering
Bachelor of Engineering – Electrical Engineering (Concentration in Computer Engineering) – Expected: December 2020

SKILLS

Software:	OPNET Modeler, LabVIEW, LTSpice/Multisim, Eclipse IDE, vim, Mathematica, Jupyter Notebook, AGI Systems Tool Kit (STK)
Programming Languages:	C, C++, Python, R, MATLAB/OCTAVE, assembly, HTML, CSS, Javascript, Java, Verilog
Operating Systems:	Windows, Linux

EXPERIENCE

Research Foundation of the City University of New York (RF CUNY)
Supervisory Research Assistant   *Sept. 2017 - Present*
AI and Game Theory Based Autonomous CDN Software Agents for Dynamic Trust Evaluation
- Designed and built Mobile Ad-hoc Networks (MANETs) with OPNET modeler simulation suite.
- Utilized bio-inspired computing techniques such as Genetic Algorithms, Particle Swarm Optimization (PSO), and Game Theory for UAV positioning.
- Designed and developed scripts for automation and data post processing using MATLAB, C++ and Python. Utilized AGI Systems Tool Kit (STK) and MATLAB for data visualization.
- Developed, designed and tested algorithms for communication and movement.
- Developed Co-Simulations (MATLAB + OPNET) using MATLAB engine library.

CUNY City College of New York
Undergraduate Researcher   *Aug. 2019 - Present*
Quantum Computing for Artificial Intelligence (with Qiskit and IBM-Q experience)
- Applied quantum support vector machine algorithm to various test datasets to study the effects of quantum fidelity on classification precision.
- Design and write scripts to extract quantum circuits used for feature mapping and kernelization in quantum support vector machines.
- Investigated the effects of quantum noise and the fidelity of quantum states and their impact on algorithm accuracy.

Harlem Launch Alliance
Electrical and Computer Engineering Section Chief   *Sept. 2019 - Present*
- Develop and organize IEEE and Harlem Launch Alliance collaborative Rocketry Crash Course for electrical and computer engineers interested in working on rocketry projects in the Harlem Launch Alliance (Project Messenger, Project Aries).

CUNY City College of New York
Programming Tutor/Teaching Assistant   *Mar. 2019 – Aug. 2019*
Course: EE 25900 (4 credits) – Programming for Electrical Engineers
- Aid students in the completion of projects and preparations of exams. Discuss the time and space complexities involved with the algorithms reviewed during lecture.

LEADERSHIP

Institute of Electrical and Electronics Engineers (IEEE) CCNY Student Chapter
Vice President   *2019 – 2020 Academic Year*
Propose, budget and manage engineering related projects and workshops. Giving students hands-on experiences in working with industry tools and workspaces.

CUNY City College of New York - The Grove School of Engineering
Major Representative – Electrical Engineering   *2019 – 2020 Academic Year*
Representative for Electrical Engineering students in departmental faculty meetings within Grove School of Engineering.

PUBLICATIONS

"**AI based Flight Control for Autonomous UAV Swarms**," *5th Annual Conference on Computational Science & Computational Intelligence (CSCI '18)*, Las Vegas, Nevada, pp. 1-6, Dec. 13-15, 2018.
"**Game Theory and Biology Inspired Flight Control for Autonomous UAVs Operating in Contested Environments**," *The 40th IEEE Sarnoff Symposium 2019*, Newark, New Jersey, pp. 1-6, Sept. 23-24, 2019.
"**AI and Game Theory Based Autonomous UAV Swarm for Cyber Security**," *MILCOM 2019*, pp. 1-6, Nov. 12-14, 2019.

PROJECTS

Assembly Minesweeper – Completed a terminal based minesweeper game with varying difficulties in x86 assembly language
C++ Neural Network – Implemented a general purpose neural network class from scratch in C++. Developed a general purpose matrix class that dynamically allocates memory to support the neural network.
Climate Change Correlation – Used R to investigate the correlations between increased meat consumption, sea level and average temperature of different countries. Used machine learning to predict mean and median global temperatures.