Tae Wook (Tyler) Kim

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Education

Columbia University, The Fu Foundation School of Engineering and Applied Science – New York, NY, September 2020 – Present (*Leave of Absence until 2022 Fall*)

- Intended Major: Computer Science

Kent School – Kent, CT, September 2017 – June 2020

- GPA: 4.10, *High Honors*
- Awards: Bowdoin Book Award for extraordinary service to the community and passion for innovative thinking, Volunteer Service Award

Research Experiences

***Independent Research Project:* ORBITRON** **January 2018 – June 2020**

- Built a vehicle with a spherical wheel that implements a 4 wheel independent steering/driving system with Arduino and C# Winform Application. **[Portfolio]**
- Developed and implemented a novel control algorithm in Mathematica and wrote a paper titled *'Intuitive Control Algorithm Development of 4WIS/4WID Using A SpaceMouse'* in front of school body; Won 7 awards at CT Science Fair; patent-pending (Application Number: *KR 10-2019-0087022*)

***Participant,* 61st Annual UF SSTP (Student Science Training Program)** **June 2019 – Aug 2019**

- Assisted ML texture analysis research in Professor Alina Zare's Machine Learning and Sensing Lab by implementing deep network models in PyTorch and conducting various experiments with different parameters
- Wrote and presented a research report titled *'Histogram Layer for Texture Classification'* and received the best research paper award among SSTP participants

***Intern,* EDGC(Eone Diagnomics Genome Center), Korea** **June 2018 – Sept 2018**

- Assisted in a research in colorectal cancer diagnosis using deep learning algorithms
- Provided a presentation every week about related articles/researches and taught myself how to find/analyze patterns on different datasets with python machine learning libraries.

Extracurricular Activities

***Member,* DIYA - KL ML2's Machine Learning Club, Korea** **March 2021 – Present**

- Presenting and implementing two relevant papers in the Multi Agent Reinforcement Learning team every week.
- Upcoming project: testing MARL algorithms directly to multiple environments such as Pommerman and Snake game.

***Project Lead,* Coronavirus Visualization Team, US** **April 2020 – Sept 2020**

- Initiated and led a 30-person team 'COVID-19 in South Korea'; Held bi-weekly online meetings and produced visualizations and infographics in an attempt to explain South Korea's successful response to COVID-19.
- Focused in analysis and research for Korea's 5-day mask rotation policy, self-quarantine smartphone app, and testing-and-tracking method; Acknowledged in *Kent Quarterly*, alumni magazine for Kent School.

***President,* Coding Club, US** **Sept 2018 – June 2020**

- Initiated and led a STEM outreach program where members visited a local middle school monthly to teach students in grades 6–8 how to program and play with a robot using mBots and Blockly;
- Held bi-weekly meetings to connect students interested in coding with appropriate resources and faculties in school

***Math/Science Peer Tutor,* Kent School, US** **Sept 2018 – June 2020**

- Assisted other peers to understand concepts easily and prepare for tests in math/science subjects during studyhalls..
- Proposed and implemented an online chatbot application that allows students to fill out feedback form, book tutoring sessions, and know each tutor's expertise subjects with iMessages.

***President & Founder,* KentGenomeBox, US** **Sept 2018 – June 2020**

- Partnered with MyGenomeBox.inc, developed/published a DNA app that gives personalized coffee recommendations based on an individual's genome sequence.

Additional Information:

Computer Skills: Proficient in Python and Java; Experienced with MATLAB, Mathematica, fast.ai, PyTorch, and LaTeX
Languages: English (Native), Korean (Native), Mandarin (Elementary)
Hobby Projects: Chisktale (a fan-game development in C#) **[Video]**, T-33 (airsoft turret with Arduino and C# Winform App) **[Video]**