

Brian Hyeongseok Kim

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EDUCATION & SKILLS

University of Southern California, Los Angeles, CA

Expected: May 2024/2027

M.S./Ph.D. in Computer Science

GPA: 3.92/4.0

New York University, Abu Dhabi, UAE / New York, NY

May 2022

B.S. in Computer Science | Minors: Interactive Media, Psychology

GPA: 3.913/4.0 (Cum Laude)

Technical: *Proficient:* C/C++, Python, JavaScript, Swift | *Intermediate:* Java, SQL, R, Bash

Tools: Git, LLDB/GDB, Linux, LaTeX, Tensorflow, NumPy, Scikit-Learn, Gurobi, LLVM, MongoDB, Node.js, Kubernetes, Docker, JIRA

Courses: Software Engineering, Machine Learning, Operating Systems, Databases, Program Analysis & Verification, Computer Security, Computer Networks, Algorithmic Problem Solving, Cyber Physical Systems

Certificates: Introduction to Product Management, Explore a Career in Product Management

PROFESSIONAL EXPERIENCE

University of Southern California

Los Angeles, CA

Research Assistant | Reliable and Secure Software Lab | *ongoing work*

Aug 2022 - Present

- Develop a novel verification tool in **C** and **Gurobi**, achieving **~10X** faster runtime than competing solutions, and employ sound approximation and linear programming to verify fairness of machine learning models
- Train neural networks on fairness datasets with **Tensorflow/NumPy** in **Python**, resulting in notable accuracy of **76-85%**
- Lead a **3**-member team in finding research gaps, creating hypotheses, and translating algorithm into functional prototypes
- Communicate complex results and project updates to diverse audiences in **LaTeX** writing and presentations

New York University

Abu Dhabi, UAE

Research Assistant | Cyber Security and Privacy Lab | *work under submission*

Jan 2021 - May 2022

- Pioneered a web privacy **JavaScript** attack with **<2-second** runtime that utilizes **Web API** to collect data from page elements modified by extensions, conducting a **first** study to apply browser extension fingerprinting on mobile devices
- Orchestrated a **Linux** server deployment and firewall configuration with **Node.js** and **MongoDB** in **REST API** design
- Performed **SQL** queries on **15,000+** records to quantify the impact of variable interaction on user identification

Gwangju Institute of Science and Technology

Gwangju, South Korea

Research Assistant | Networked Intelligence Lab

Sep - Dec 2020

- Streamlined a video streaming application by **Dockerizing** and deploying it on a **Kubernetes** cluster through **SSH**
- Crafted a **30**-page technical report detailing requirements, specifications, and installation steps for experts and laypersons

imagi | *a leading edTech startup featured in Apple WWDC23*

Stockholm, Sweden

iOS Development Intern

Jun - Aug 2020

- Launched over **10** features successfully, enabling **5%** increase in Weekly Active Users and **2%** decrease in data traffic cost
- Spearheaded the release of a game module that teaches **Python** concepts, from **Figma** design to implementation in **Swift**
- Collaborated with product and design teams on agile sprint planning, UI/UX design, product demo, and release testing

LEADERSHIP EXPERIENCE

REACH, New York University | *mental health support e-board*

Abu Dhabi, UAE

President, Treasurer

Aug 2016 - May 2022

- Facilitated meetings of **15+** stakeholders to define requirements and budget/legal constraints of external initiatives
- Created and evaluated qualitative/quantitative data (**4** focus groups, **1000+** surveys) to understand student pain points
- Delegated and managed tasks of **10+** members to launch internal initiatives (brand style guide, onboarding material)
- Budgeted **~\$3,000** and established relationships with third party vendors for **15+** events per year
- Received **Emerging Leader Award** at the 2017 NYUAD Campus Life Awards

TEACHING EXPERIENCE

University of Southern California

Los Angeles, CA

Teaching Assistant (CSCI 310: Software Engineering)

Aug 2022 - Present

- Assume the role of Product Owner, driving vision, specs, and prototype design for **12** Android projects of **50+** students
- Present software engineering concepts (unit testing, API integration, development lifecycles) to **200+** students

Cheongshim ACG English Camp

Gapyeong, South Korea

Teaching Assistant (6th Grade English)

Jul 2022

- Conducted **10+** vocab quizzes and writing assignments for **15+** students and wrote report card comments for parents
- Supervised recreational activities and provided weekly 1:1 counseling regarding issues such as homesickness or bullying

AWARDS

4th Place (out of 32) | 2020 AWS Dream AI DeepRacer Competition

Gwangju, South Korea

AWS DeepRacer Autonomous Vehicle Race

Dec 2020

- Participated as part of a **3**-member team to develop a reinforcement learning model for the best lap completion time
- Fine-tuned algorithms to adjust vehicle to stay on track and avoid collisions based on inputs from camera and LiDAR, improving lap completion time down to **<15 seconds**

3rd Place (out of 20) | Korean National Big Data Analysis Awards

Daegu, South Korea

Waste Management Optimization

Sep - Oct 2020

- Extracted patterns and trends from **300+** national civil complaints to identify waste management as a key issue through web scraping and data visualization with **Selenium/Pandas in Python**
- Optimized **3+** waste management routes through cost-effective targeting of streets using factor analysis and geocode in **R**

Audience Award | NYUAD Hackathon for Social Good

Abu Dhabi, UAE

Nitaq: Gamified Lesson Plans

Apr 2020

- Developed **JavaScript** templates for required data structures, facilitating data flow between server and web/mobile apps that transform teachers' lesson plans uploaded to the website to interactive story-based games on students' phones
- Directed **15**-person communication among teams and mentors to define and deliver project requirements

PROJECTS

Modeling Earthquake Damage using Machine Learning

Spring 2023

- Trained models using ensemble and gradient-boosting methods, hyperparameter tuning, and feature selection in Python (Tensorflow, Keras, Scikit-Learn) with accuracy of **~78%**, achieving **Top 10%** in the DrivenData competition

Game-Theoretic Planning for Intersection Crossing

Fall 2022

- Simulated intersection crossing for autonomous vehicles as a potential game, using iLQR algorithm in Python (NumPy, SymPy, QPSolvers) to calculate the Nash equilibrium solution for optimal paths that abide by constraints

PERSONAL

Languages: *Native:* English, Korean | *Conversational:* Spanish

Interests: Maintaining a [book blog](#), Playing clarinet at a [local LA orchestra](#)