William Seo

Pittsburgh, PA 15213

✉ seo.yunsoo@gmail.com   in www.linkedin.com/in/wyseo

EDUCATION

Carnegie Mellon University   **Pittsburgh, PA**
BS in Computer Science, GPA: 4.0/4.0   *Expected Graduation: May 2023*

EXPERIENCE

CryptoLab   **Seoul, South Korea**
Software Engineer Intern   *Jun 2021 - Aug 2021*
- Developed Homomorphic Machine Learning and Statistics Library
- Implemented statistical functions using homomorphic addition, multiplication and approximation functions
- Optimized throughput and error rates by testing different methods of calculation and data pre-processing

CMU SCS: Data Structures and Algorithms (15-210)   **Pittsburgh, PA**
Teaching Assistant   *Aug 2021 – Dec 2021*
- Led weekly recitations reviewing the content covered in lectures
- Held weekly office hours to help students struggling with the course material

SK Telecom Quantum Lab   **Seongnam-Si, South Korea**
Intern   *Jul 2018 – Aug 2018*
- Contributed to the development of a trapped-ion quantum computer
- Collected experimental data of the voltage gain of helical resonators

PROJECTS

Malloc Lab   *June 2020 - Jul 2020*
- Implemented a dynamic storage allocator for C programs using C
- Optimized the time and space costs of malloc and free operations
- Achieved 76.8% space utilization and 18,257 Kops/sec throughput
  (Benchmark: 74% utilization and 9,261 Kops/sec throughput)

Proxy Lab   *Jul 2020 – Aug 2020*
- Implemented an HTTP web proxy that caches web objects using C
- Optimized the proxy to be able to handle multiple requests concurrently using threading

2D Game using Pygame   *Nov 2019 – Dec 2019*
- Designed and implemented a top-down dungeon crawler game in Python using the Pygame library
- Programmed random map generation, enemy AI, projectiles, side-scrolling, and visual/sound effects

COURSEWORK AND SKILLS

- Relevant Coursework: Parallel and Sequential Data Structures and Algorithms, Intro to Computer Systems, Principles of Imperative Computation, Principles of Functional Programming, Structure and Design of Digital Systems, Great Ideas in Theoretical CS, Intro to ECE
- Planned Coursework (2021-22): Algorithm Design and Analysis, Intro to Deep Learning, Intro to ML
- Programming Languages: Python, C, C++, Standard ML, Assembly Language
- Fluent in English and Korean

ACHIEVEMENTS

- 2019 AIME II: Scored 9/15
- 2018 NEAMC: Placed 100th percentile, invited to WMC (6 Gold, 2 Silver medals)
- 2019, 2018, and 2017 ARML Local Korea: 3-time Champion (Team)