WONJAE LEE

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EDUCATION

University of California, Berkeley May 2023
Bachelor of Science, Electrical Engineering and Computer Science (EECS)

Relevant Coursework: Data Structures, Structure and Interpretation of Computer Programs, Computer Architecture, Discrete Math and Probability, Efficient Algorithms and Intractable Problems, Introduction to Database Systems, Computer Security, Designing Information Devices and Systems

EXPERIENCES

UC Berkeley College of Engineering **Berkeley, CA**
CS 61C Academic Intern January 2022 - Current
- Helping weekly sections of 30 students to build a firm foundation of C and machine structures.
- Reinforcing students' knowledge in pointer, cache, concurrency, memory management, etc.

UC Berkeley College of Engineering **Berkeley, CA**
CS61A Academic Intern August 2021 - December 2021
- Helped weekly lab sections of 30 students to build the basics of Python, SQL, and Scheme.
- Helped students learn the foundation of computer science such as recursion, tree, linked list, classes, functions, and object-oriented programming.

New Creation Christian School **Yongin, South Korea**
Computer Science, Math, Physics Instructor & Counselor August 2020 - July 2021
- Helped students learn the basics of computer science, taught Java and Python, and lectured multivariable calculus, AP calculus BC, and AP physics C.

PROJECTS

Exploiting Memory Vulnerabilities **Berkeley, CA**
CS 161: Computer Security - UC Berkeley February 2022
- Bypassed security mitigations such as stack canaries and address space layout randomization (ASLR) by adeptly utilized format string vulnerability, ret2esp vulnerability, time-to-check-time-to-use vulnerability, etc, and got root access in x86 operating system.

Baseball SQL **Berkeley, CA**
CS 186: Introduction to Database Systems- UC Berkeley February 2022
- Implemented a SQL query with Lahman baseball statistics database that provides the sabermetrics of baseball players including Lifetime Slugging Percentage (LSLG) and OPS.
- Also created a query with useful information such as average salary of the league, year-over-year changes in minimum, maximum, and average salary of the league, etc.

NumC **Berkeley, CA**
CS 61C: Great Ideas of Computer Architecture (Machine Structures) - UC Berkeley November 2021
- implemented a simple version of numpy using C, Java, and Python.
- Improved performance of the matrix operations by using SIMD, OpenMP, cache blocking, loop unrolling, and algorithms including Karatsuba algorithm, exponentiation by squaring, etc.
- Prevented memory leaks using Valgrind debugged segment fault using cgdb.

CS61CPU **Berkeley, CA**
CS 61C: Great Ideas of Computer Architecture (Machine Structures) - UC Berkeley October 2021
- Built a CPU that runs actual RISC-V Instructions using C, Python, and Logisim.
- Implemented a 2-step pipeline in the CPU to support concurrency, making it efficient.

SKILLS

Proficiencies: Python, C, C++, Swift, Go, Java, Numpy, RISC-V, JavaScript, SQL
Experience with: Scheme, Scipy, Pandas, Matplotlib, SIMD, OpenMP, OpenCV
Software: Git, XCode, Jupyter-Notebook, Firebase, AWS