Jim Palomo

Computer Engineering Major · The University of Illinois at Chicago

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Education

University of Illinois at Chicago (UIC) *Chicago IL*

Bachelor of Science in Computer Engineering *Expected Graduation: May 2022*

- Cumulative GPA: 3.79
- Undergraduate Coursework: Data Structures, Embedded Systems, Logic Design, Circuit Analysis, Computer Architecture, Discrete and Continuous Signals, Digital Systems Design
- Filipinos in Alliance Allstate Hot Chocolate Run 5k/15k; (Self) 34th Annual Hunger Walk

Skills

Languages C · C++ · Python · ARM Assembly · MIPS Assembly

Software/Tools Linux · Git · SSH · Catch Framework · Valgrind · MARS

Internships

Computer Architecture Simulations *Chicago, IL*

Intern, Co-Op Aide *Jun 2019 - Aug 2019*

- Worked on an open-source simulation platform for computer system architecture called gem5
- Established connections among different CPU chip-sets such as ARM & x86 with memory controllers, caches, and interconnects
- Cooperated with an engineering professor and a Ph.D. student on programming tasks and assignment deadlines
- Gained knowledge on Object-Oriented Programming for Python and C++

Projects

Cache Simulator *UIC*

MIPS · Python *Nov 2020*

- Lead a team to simulate four different types of cache configurations: Simple (1 block, block size 64 B), Direct Map (4 sets, block size 16 B), Fully Associative (4-way, block size 8 B), Set Associative (2-way 4-set, block size 8 B)
- The simulator in Python takes in hexadecimal machine code inputs from MIPS and determines program mode according to user input
- Programmed the simulator to display detailed step-by-step cache information: memory breakdown, LRU (least recently used) specifics, hit or miss results

8-Bit CPU Design *UIC*

MIPS · Python · CircuitVerse *Oct - Nov 2020*

- Designed a custom ASIC-style ISA with a team featuring nine unique 8-bit instructions with binary width determination instruction
- Developed the following components: 64-byte ROM instruction memory, ALU schematic, Control unit logic, and CPU Datapath
- Lead the software development portion that simulated the ISA in Python and MIPS which takes in binary machine code through a text file that outputs expected results

Back-End Navigation *UIC*

C++ · XML · Valgrind (Memory Leaks) · Linux · GNU Make *Apr - May 2020*

- Designed an application that allows the user to observe the back-end functions of GPS oriented maps through loading a map, building a graph, and finding the shortest path between two separate locations
- Integrated Dijstrakia's algorithm to find the shortest path among two points
- Implemented map data from openstreetmap.org of UIC's East Campus containing over 18,000 nodes which covers 34 buildings
- Debugged using VSCode, (data structures) Map, Graph, Stack, Vector, Set, Queue

DIVVY Data Hashing *UIC*

C++ · CSV · Valgrind (Memory Leaks) · GNU Make *Apr 2020*

- Developed an application that hashes station and trip data from DIVVY bike-sharing company
- Created a hashmap with separate hash functions for over 1500 trips and 580 bike IDs
- Added multiple commands: search by station id, abbreviation, trip id, bike id, nearby stations, and similar trips
- Debugged using VSCode, (data structures) Vector, Hashmap