Nicholas Johnson

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WORK EXPERIENCE

PolyArch **June. 2023 – Present**

Researcher *Los Angeles, CA*

- Research group at UCLA focused on breaking and reforming traditional abstractions across applications, programming languages, compilers, hardware/software interfaces, and microarchitectures.
- I am currently researching with NSF funding and implementing a conditional step instruction to our simulated architecture to explore novel and faster ways to perform join operations.
- Work involves but is not limited to: running gem5 simulations, benchmarking utilizing the GAP suite, running docker containers, programming in C and Python, and understanding how code is broken down to the machine level in order to properly add a new instruction to the simulated architecture.

Department of Defense **June 2022 – September 2023**

Software Engineering Intern *Layton, UT*

- Project 1 – Developed an autonomous ground drone capable of object detection over a live video feed. Multiple drones would communicate through a single ground station and report findings. When the object was found by one drone, the rest would converge. My task was to implement live object detection in Python, and I also assisted with self-driving in ROS.
- Project 2 – Worked on a Recruiting Robot, a humanoid robot capable of facial tracking utilizing Tensorflow and fully capable of conversation. My tasks were to fix issues within the Tensorflow implementation and to help with the language model to make the robot learn through conversations.
- Project 3 – Was outsourced to numerous other projects to help with containerization using Docker and to support other groups with implementing AI/ML capabilities.

Center for Quantum Science & Engineering **September 2021 – September 2022**

Researcher *Los Angeles, CA*

- My team focused on the simulation of quantum devices. My responsibilities included utilizing fundamental quantum mechanical processes such as Schrodinger's Equation and Poisson's Equation to determine potential energy and electron density in a simulated semiconductor device. Additionally, I worked on back-end development, utilizing C++, Python, SQL, and CMake file development.

Bruin Tutoring (bruintutoring.com) **September 2022 – Present**

Founder & CEO *Los Angeles, CA*

- Bruin Tutoring focuses on teaching computer science fundamentals to high school students so that they may succeed in college as CS majors. Additionally, I provide tutoring services for active college students in all lower division Math, Physics, and CS coursework.

EDUCATION

UCLA (graduated from High School at 15, attended CC from 15-17) **Graduating in Summer 2024**

B.S. Computer Science & Engineering *Los Angeles, CA*

- 3.83 GPA
- Member of UPE (Upsilon Pi Epsilon) – CS Honors Society
- Club Baseball, Surfing, Hackathons, UPE Tutor/Member

SKILLS & AWARDS

- **Skills:** C, C++, Python, HTML, JS, CSS, Unix/Linux, Docker, Reverse Engineering, Kernel Driver Development, Graphs/Algorithms, Kubernetes, Data Structures, AI/ML, Assembly, Git, Scrum/Agile
- **Awards:** Valedictorian, Outstanding Graduate of Math and Science (Community College), President's Distinction (Community College)