Joel S. Kim

1609 Colchester St, Danville, CA 94506 (925)-389-7776 joel_kim@brown.edu

EDUCATION

Sc.B. in Computer Science @ Brown University *Providence, RI | September 2021-May 2025 (expected)*

- Accelerated Introduction to Computer Science (Pyret and Racket)
- Fundamentals of Computer Systems (C and C++, x86-64 assembly)
- Introduction to Computer Graphics (C++)
- Artificial Intelligence (Python, Prolog)
- Digital Computer Systems (ARM assembly, C)
- Introduction to Discrete Structures and Probability (Lean)
- Introduction to Software Engineering (Java, JavaScript/TypeScript: React, HTML5, CSS)
- Deep Learning (Python: Tensorflow/Keras, pandas, NumPy, Scikit-learn)
- Computer Networks (Go, Wireshark)
- Software Security and Exploitation (C/C++, x86-64 assembly)
- Real-Time and Embedded Software (Arduino)
- Computer Systems Security (Go)
- Applied Cryptography (C++: Crypto++)
- User Interfaces and User Experience (Figma, HTML/CSS)

EXPERIENCE

UNDERGRADUATE TEACHING ASSISTANT | *CSCI 0300 Fundamentals of Computer Systems*

Brown University *Providence, RI | January 2023 - May 2023*

- Supported ~200 students in learning OOP with C and C++
- Designed and debugged course projects, held semiweekly hours for conceptual questions and debugging student code, led sections to teach students about key systems topics

MATERIAL SCIENCE DIVISION UNDERGRADUATE INTERN

Lawrence Livermore National Laboratory *Livermore, CA | July 2022 - August 2022*

- Developed programs to generate images simulating material microstructures
- Designed a convolutional neural network image regression model trained on the generated images utilizing the Tensorflow/Keras libraries

BROWN-RISD GAME DEVELOPERS (BRGD) PROGRAMMER

Brown University Student Club *Providence, RI | January 2022 - December 2022*

- Designed the mechanics and gameplay of a Unity-based game (C#)
- Collaborated with art and design teams as a programmer to implement game entities and their behavior
- Iteratively developed streamlined source code with easy accessibility for other programmers

PROJECTS

TaskTrak

- Developed a full-stack task manager web application with a team of four over the course of a month
- Primarily focused on the backend, working with Firebase (NoSQL) database management and security, a time slot suggestion algorithm, and API integration with a Spark server
- Additionally worked on streamlining the React frontend through rigorous unit and integration testing

BRGD Completed Games | *Developed in Unity*

- https://brownrisdgames.itch.io/private-ear | https://brownrisdgames.itch.io/meowfia

Virtual TCP/IP Network

- Constructed a virtual IP network over UDP sockets with a link layer, IP forwarding, and routing in a team of two
- Built an RFC9293-compliant TCP on top of the IP layer to reliably send data between virtual hosts in a lossy network

TECHNICAL SKILLS

- **Languages:**
  - Proficient in: C and C++, Python, Go
  - Familiar with: JavaScript/TypeScript, Java, Swift, x86-64/ARM assembly, bash, HTML/CSS, C#
- **Tools:** Firebase (NoSQL), npm, Git, Docker, Unity, Arduino, Wireshark, Vim, MATLAB, Maven, Blender, Fusion360
- **Frameworks:** React, JUnit, Jest