Kevin Shi

nwk6tq@virginia.edu | linkedin.com/in/kevinshi0 | github.com/itskevinshi

Education

University of Virginia Charlottesville, VA

Bachelor of Science in Computer Science, 3.91/4.00 GPA *Aug. 2022 – May 2026*

Relevant Coursework: Data Structures and Algorithms, Computer Systems, Software Development, Parallel Computing, Machine Learning, Reinforcement Learning, Computer Vision, Natural Language Processing, Networks

Experience

Google May 2025 – August 2025

Software Engineer Intern

Northrop Grumman May 2024 – July 2024

Software Engineer Intern

- Designed and implemented a comprehensive menu system in a Red Hat Enterprise Linux environment using C# for entity filtering enhancing operator situational awareness and productivity while reducing error rates by 10%
- Leveraged image preprocessing and OCR algorithms to extract structured data from image-based documents, saving 20+ hours of manual labor and streamlining subsequent data integration and analysis
- Reduced organizational risk by systematically evaluating 200+ vulnerabilities through SonarQube, implementing effective mitigation strategies and determining appropriate risk tolerances
- Led cross-functional meetings with government stakeholders to gather requirements and validate product features

OmnisTMS June 2023 – Aug. 2023

Software Engineer Intern

- Developed a web application leveraging Sails.js, Socket.IO, and MongoDB, enabling secure authentication and real-time updates of user information, increasing responsiveness and enhancing user experience with the system
- Migrated codebase to the latest version of jQuery, addressing breaking changes and improving load times by 5-10%
- Spearheaded implementation of 5+ features and bug fixes, optimizing user experience and increasing efficiency

Projects

Weather-Resilient Plant Disease Detection | *PyTorch, OpenCV, ResNet-50, NumPy*

- Developed a computer vision system to accurately diagnose plant diseases under adverse weather conditions such as rain or fog, addressing limitations of current SOTA models trained only on ideal, high-resolution images
- Engineered custom weather augmentation algorithms simulating real-world conditions using atmospheric scattering models and fisheye distortion techniques to improve model robustness in adverse weather conditions
- Fine-tuned deep learning model on augmented dataset, improving performance from 35% to 88% accuracy on rain-affected images and from 27% to 95% on fog-affected images while maintaining baseline performance

Show Me A Sign (HooHacks 2025 2nd Place Overall) | *React, OpenCV, TensorFlow, Flask*

- Built an interactive ASL learning platform with structured lessons and real-time gesture recognition, utilizing computer vision and machine learning to provide immediate feedback on sign accuracy with 90%+ detection rate
- Designed an adaptive difficulty progression system that guides users from alphabet signs to numbers and phrases
- Architected a hand tracking system using OpenCV and MediaPipe, training a custom CNN model on ASL datasets and combining it with geometric analysis to enhance recognition accuracy across various lighting conditions
- Constructed a multi-process backend using Flask and WebSockets that maintained 30+ FPS performance while executing complex computer vision algorithms and providing real-time feedback to the React frontend

CHIP-8 Emulator | *C++, SDL3, CMake, Google Test*

- Engineered a CHIP-8 emulator from scratch, implementing the instruction set of the CHIP-8 virtual machine
- Implemented memory management, CPU cycle emulation, and timing systems to simulate the CHIP-8 system
- Integrated SDL3 for graphics rendering, keyboard input, and sound output, enhancing the end user experience
- Developed a test suite using Google Test framework, achieving coverage of all 35+ opcodes and system behaviors

Technical Skills

Languages: Java, C#, Python, C++, JavaScript, SQL, HTML/CSS
Tools/Technologies: .NET, React, Angular, Django, Bootstrap, Express, Firebase, MongoDB, Amazon S3, Scikit-learn, NumPy, Matplotlib, Material UI, JUnit, Git, GitHub