

# Shaun Loo

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## EXPERIENCE

<b>Member of Technical Staff</b> <i>Bold Software Inc</i>	Jan 2026 - Present San Francisco, CA
• Implemented vital user-facing virtual-machine control mechanisms on the <code>exe.dev</code> virtual machine service	
• Maintained custom kernels and Linux container images, focusing on process isolation and user experience in a high-volume startup product	
<b>Fyra Labs LLC</b> <i>Software Engineer</i>	August 2025 - Present Minneapolis, MN
• Maintained packages on the Terra community package repository	
• Assisted in maintaining a Fedora-based distribution, focusing on user experience and GUI responsiveness	
• Implemented a Nix installer for Ultramarine Linux ahead of the official FESCo Nix directory decision	
<b>FFmpeg Code Contributor</b> <i>Google Summer of Code</i>	May 2023 - August 2023 Mountain View, CA
• Implemented VVC (H.266) decoding in-loop filters in assembly with AVX2 SIMD to maximize parallelism	
• Achieved a 3.6% speedup compared to compiler output, achieving smooth 4K playback on commodity hardware, preparing FFmpeg for next-generation video codecs	
• Employed GitHub Actions and Test-Driven Development methods to write optimized <code>x86_64</code> assembly	
<b>System Administrator</b> <i>University of Minnesota ACM Student Chapter</i>	May 2023 - May 2025 Minneapolis, MN
• Administered and provisioned over 100 virtual machines for community use using <code>bhyve</code> and <code>KVM</code>	
• Managed a diverse fleet of servers, from ZFS storage servers to multi-GPU systems for ML use	
• Overhauled the ACM UMN network with symmetric 10 Gigabit and 256 publicly addressable IPv4 addresses with Cisco and Arista switches and OPNSense firewall	
• Built community interest and skills in Unix system use by hosting high-turnout workshop events teaching the command line, Git, self-hosting, and using web development tools on Linux and FreeBSD	

## TECHNICAL SKILLS

<b>Languages:</b> C, C++, Rust, OCaml, JavaScript, TypeScript, Python, MATLAB, Haskell, Java, <code>x86_64</code> Assembly
<b>Frameworks:</b> Ember, Svelte, Flask, Zola, GCP (Firebase, Firestore)
<b>Developer Tools:</b> Git, Nix, Docker / Podman, OpenMPI, CUDA, Bash, KVM, <code>mdadm</code> , PostgreSQL, L <sup>A</sup> T <sub>E</sub> X
<b>Libraries:</b> PyTorch, pandas, NumPy, Matplotlib, D3, zlib, imgui
<b>Operating Systems:</b> Debian, NixOS, Fedora, RHEL and Rocky Linux, macOS

## EDUCATION

<b>University of Minnesota Twin Cities</b> <i>Master of Science, Computer Science</i>	Minneapolis, MN Sep 2024 - May 2025
• Selected Coursework: <b>Programming Languages Theory, Real-Time and Embedded Operating Systems, Error Correcting Codes</b> , Advanced Computer Architecture, Computer Graphics	
<b>University of Minnesota Twin Cities</b> <i>Bachelor of Science, Computer Science</i>	Minneapolis, MN Sep 2021 - May 2024
• Selected Coursework: <b>Operating Systems, Parallel Computing, Mathematical Cryptography, Formal Languages and Automata Theory, Computer Networks</b>	

## SELECTED PROJECTS

<b>PICO-386</b>   <i>C, x86 Assembly, UART, Flex, Bison</i>	June 2025 – Present
• A PICO-8 emulator for 386 IBM PC compatible systems, exploring interrupt-driven programming	
• Implemented a PNG decoder capable of decoding 8bpp images in C	
• Developed a Lua interpreter in C using the Flex lexer and the Bison parser-generator	
• Implemented RS-232 UART-interfacing debugging I/O and basic VGA draw calls in <code>x86</code> assembly for speed	