

Sean Lee

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Personal Profile

- [WebGL Rendering Research Demo](#), my personal passion projects.
- Front-End Engineer with Webapp experience in React/Typescript/Electron/Webpack/SVG/WebGL/Pixi
- Demonstrated proficiency in crafting comprehensive design documents to effectively communicate and document solutions
- Highly participation of review process and testing codes.
- Project planning and task break-down - from chaos to clarity
- Joining a massive code base project. e.g., Firefox Browser, FxOS, and Canva
- Being a leader for the task assignment and mentoring team members - MiTAC

Job History

Software Engineer, Canva Inc.

October 2019 - present (4yr 2m+)

Web and Electron App Developer in Electron/Typescript/Protobuf/React

Senior Software Engineer, Phase.

August 2018 - September 2019 (1yr 1m)

Web-based Designer Tools development in React/Redux/SVG/WebGL/Pixi

Senior Software Engineer, Mozilla.

Oct 2014 - Jan 2018 (3yr 3m)

Firefox Browser, Gaia of Firefox OS, Web app development

Senior Software Engineer, Symbio Inc.

Jul 2012 - September 2014 (2yr 2m)

Develop the front-end of PaaS and SaaS with Javascript/HTML/Java

Software Engineer, MiTAC Inc.

Apr 2009 - Apr 2012 (3 yr)

Develop Embedded Linux POS, Diagnostic System in QT/C/C++

Web Experience

Offline Experience Development / [Canva Inc.](#)

Service Worker/IndexedDB/Cache

- Developed the Service Worker script to efficiently handle requests.
- Designed and implemented a Canva design preloading mechanism for seamless display of offline designs.
- Led the Offline Fallback page project, enhancing the overall offline user experience.
- Spearheaded the Offline Presenting project, focusing on preloading and displaying offline presentation designs.

- Led the storage layer project, integrating IndexedDB and Cache API for privacy policy compliance.
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Desktop App Development / [Canva Inc.](#)

Electron/Typescript/React/Protobuf

- Electron based-on Desktop app
 - Took charge of the development of the Eyedropper feature, addressing a high demand from users.
 - Successfully implemented the functionality to export designs to images in offline mode.
 - Developed tab management features to enhance the desktop application's usability.
 - Cross-platform/Cross-version Architecture
 - Compatibility Check Mechanism/API version management
 - Based on proto definitions for checking API capabilities
 - React/MobX based Webapp
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Designer Tools Development / [Phase](#)

React/Javascript/SVG/WebGL

- React/Redux based Webapp
 - Architecture Design
 - Orchestrated the data pipeline, segregating Business Logic Controllers, UI Components, and design renderer for improved modularity and scalability.
 - Spearheaded the UI Implementation, crafting intuitive components such as Property Panel and Timeline Panel using React/Redux.
 - Implemented robust Editing History Support to enhance user experience.
 - Dimension Model Algorithm Design
 - Engineered a sophisticated algorithm for the dimension model to seamlessly support multi-state group structures, optimizing versatility in design scenarios.
 - Pixi+SVG Based Rendering Engine
 - Developed a high-performance Rendering Engine leveraging Pixi and SVG technologies, ensuring a seamless and visually compelling user interface.
 - WebGL Rendering Engine Prototype
 - Pioneered the development of a WebGL Rendering Engine Prototype, pushing the boundaries of graphic rendering capabilities for enhanced visual experiences.
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Firefox Browser / [Mozilla](#)

Javascript/HTML/CSS/C++

- Password manager and Contextual warning
 - Downloads Panel UI refinement
 - Form Autofill - heuristics, filling a form, multiple section support
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Firefox OS [Gaia](#) / [Mozilla](#)

Javascript/HTML/CSS

- Web apps development including Dialer, Firefox Sync, and Settings in Firefox OS
 - Partner support for bugs resolving of Dialer and SIM Card Toolkit(STK) app
 - Firefox Sync on TV - Bookmarks, History, and Tabs
 - Settings app on TV - key navigation
 - Cloud Storage (unidisk) project - Talk in Moz All-hands 2015
 - Porting [unidisk](#) from NodeJS to Firefox OS. See [more detail](#) below.
 - A web app of BLE Drone remote controller - Demonstration in Moz All-hands 2015
 - Rolling Spider remote controller app for FxOS
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unidisk - Web Storage via FUSE / Symbio&Mozilla

NodeJS/Linux/C/C++

- [JSDC 2015 Speaker](#) unidisk - Architecture of Web Storage filesystem
 - Refactor the new architecture in Nodejs: github.com/weilong/unidisk
 - Manipulate the files in web storage (e.g., Dropbox) just like in your disk and play a 1080p video smoothly in realtime!
 - Connect the web storage and FUSE, so that the file manipulation would be easier!!!
 - Multi-thread module to improve the overall performance.
 - Library/service - fuse-bindings, Dropbox API, BaiduYun PCS.
 - The earlier version is implemented with pthread, curl, cJSON in C/C++.
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Surveillance Video Analysis & Monitoring System / Symbio(ITRI)

Javascript/HTML/CSS/Java

- Java Web Application with PaaS API to process massive video data.
 - Frontend - Google Map API, ZK framework
 - Backend - ZK framework, Hibernate, PostgreSQL
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iRONYUN web portal of IaaS / Symbio(ITRI)

Javascript/HTML/CSS/Java

- Responsibility
 - The process of sign in/up, shopping cart, VM Dashboard, etc
 - i18n support and implement utility for i18n team to modify the phrase more easily.
 - Fix the issues after vulnerability scanning
 - Website performance optimization
 - Frontend - Bootstrap, jQuery, Backbone
 - Cloud OS client in NodeJS - used for debugging, testing, etc.
 - Use async library to simplify the API
 - Very easy to extend and use!!
 - Backend - J2EE, Spring, Hibernate, MySQL, Cloud OS of ITRI
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VM Management Utility / Symbio(ITRI)

Node.js

Library/client for a Virtualization OS to manipulate the large amount VMs. Very easy to use, test, and extend!!

Linux Experience

VeriFone Embedded Linux POS Development / MiTAC

System bring up, device drivers, a diagnostic framework for factory and testing.

- POS solution - Broadcom BCM5892 ARM SoC
- System bring up - U-Boot to Linux kernel and use ARM Development Suite (ICE) to debug.
- Linux driver for Smart Card
 - Linux Driver & Application Development - TDA8026 + BCM5892 SCI
 - Transmission Protocol - ATR, APDU
 - Retrieve the card data from a Taiwan Health Insurance Card and VISA Credit Card
- Hardware Protocol Knowledge
 - AT Command (PSTN) - Automatic PSTN device test.
 - SPI / I2C / PWM - Ability to analysis the signal in a circuit.
 - 4-Wire Resistive Touch Screen Driver - Implement a Linux driver with 2 A/D Converters in SoC.

- Miscellaneous Linux Driver - Light Sensor(SPI, ADC) / LCD driver tuning / Keypad.
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A Framework of Diagnostic for POS on Embedded Linux / MiTAC

Linux/QT/C/C++

- Worked on the design specification with the customer, the verification team, and the manufacturing team.
 - Break-down components and be a leader to assign the modules to our team members (about 20 people).
 - High Scalability Diagnostic/Auto Making System
 - Support automatically building/compiling system including build, rebuild, and clean components for each function.
 - Provide the application/library template for developers/users to develop more easily.
 - Support GUI(QT)/console control simultaneously.
 - Support high flexibility to implement a test case in C/C++ or Shell Script.
 - Well-architecture for fast porting to different screen size/resolution.
 - This system has been used to over 5 POS projects and suffered stress testing for over one month with robust reliability.
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Android Platform Booting Process Optimization / Symbio

Android/C/C++

Build a small Android system with GUI(Zygote) and improve the booting time to under 10s.

- Remove services (except Zygote) as more as possible to see how small an Android system with GUI is possible.
 - Find the dependency between Android startup services from System Server.
 - The booting process improvement from 45s to about 9s in the emulator.
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Side Projects

Apply Emdebian Grip Linux on white brand ARM netbook

Embedded Linux

- Replace the original Android 4.0 with Emdebian Grip on a netbook with Wondermedia 8850/8650 solution. [blog post](#)
 - Kernel source from github.com/linux-wmt/linux-vtwm
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Dicall! Dictionary extension

WebExtensions/Javascript/HTML/CSS

A gadget to look up Yahoo Dictionary when you select a word in web pages. [Chrome Web Store](#)

Raspberry Pi - Hardware hacking for fun

Playstation joystick hardware hacking, play arcade games on it with friends!!! [blog post](#)

Education

MS, Computer Science, Chang Gung University

2006 - 2009, Taiwan

BS, Computer Science, Chung Yuan Christian University

2002 - 2006, Taiwan

Others

Development Environment Preferences

- One-click development environment deployment for tmux, vim, etc. [configurations](#)

- Editor - vim, IntelliJ, VSCode
- Operation system - macOS, Ubuntu
- Others - tmux, git