Sean Lee
李瑋倫 / Weilun Lee

weilonge@gmail.com
github.com/weilonge

Personal Profile

- Front-End Engineer with Webapp experience in React/Typescript/Electron/Redux/Webpack/SVG/WebGL/Pixi
- Highly participation of review process and testing codes.
- The experience of project planning and task break-down - from chaos to clarity
- The experience of joining a massive code base project. e.g., Firefox Browser & FxOS
- The experience of being a leader for the task assignment and mentoring team members.

Job History

Software Engineer, Canva Inc.

November 2019 - Now

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

Senior Software Engineer, Phase.

Apr 2018 - August 2019

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

Senior Software Engineer, Mozilla.

Oct 2014 - Jan 2018

Firefox Browser, Gaia of Firefox OS, Web app development

Senior Software Engineer, Symbio Inc.

Jul 2012 - September 2014

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

Software Engineer, MiTAC Inc.

Apr 2009 - Apr 2012

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

Web Experience

Offline Experience Development / Canva Inc.

Service Worker/IndexedDB/Cache

- Build the Service Worker script for handling requests
- Build Canva desing preloading mechanism for showing offline designs
- Lead the Offline Fallback page project to enhance the offline experience
- Build a layer to integrate IndexedDB and Cache API usages for achieving the privacy policy

Desktop App Development / Canva Inc.

Electron/Typescript/React/Protobuf

- Electron based-on Desktop app
  - Support AppUpdate
  - Desktop specific feature: Eyedropper (one of the most wanted features)
- Cross-platform/Cross-version Architecture
  - Compatibility Check Mechanism/API version management
  - Based on proto definitions for checking API capabilities
- React/MobX based Webapp
- Build proccess based on Webpack

Designer Tools Development / Phase

React/Javascript/SVG/WebGL

- React/Redux based Webapp
- Architecture Design
  - Business Logic Controllers
  - Rendering Engine Integration
  - UI Implementation (e.g. Property Panel, Timeline Panel, etc)
  - Editing History Support
- Design the dimension model algorithm to support multi-state group structure
- Pixi+SVG based Rendering Engine
- WebGL Rendering Engine Experiments

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

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

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/weilonge/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++.

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

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

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.

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.

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.

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

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

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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