

Open source enthusiast and hacker specializing in web technology and linux-based systems. A WebKit and GNOME project contributor. More than 8 years experience at major players in the industry. Looking for opportunities in Web browser, Web Security & Privacy, Browser Security, Kernel, and Computer Graphics.

Skills WebKit, Blink/Chromium, GNOME, Linux, C/C++, Python, HTML/CSS/Javascript, Objective-C, Java, OpenGL/OpenGL ES, Clutter, Computer Graphics, GTK+, eBPF, BCC, Ethereum, Git, OBS, Clang, LLVM, GStreamer, Tizen, Linux Perf, Bluetooth LE, ReactJS, React Native, Embedded system, Puppeteer

Education

08/2017 - present	Ph.D student (advisor: Prof. Wenke Lee) in Computer Science, Georgia Tech in Atlanta, GA, U.S.A.
08/2017 - 08/2019	M.S. in Computer Science (Computer Systems, GPA: 3.87 / 4.0), Georgia Tech in Atlanta, GA, U.S.A.
03/2000 - 06/2008	Dual B.E. in Digital Media and Computer Engineering, Ajou University, South Korea

Professional Experience

06/2019 - present	Intern at Igalia, S.L. in A Coruña, Spain <ul style="list-style-type: none">• Bring ANGLE backend for WebGL to WebKitGTK• Zero copy texture sharing between Mesa and ANGLE via Linux DMA buffer
05/2020 - 08/2020	Intern at Samsung Research America in Mountain View, CA
05/2019 - 08/2019	<ul style="list-style-type: none">• Build a web app for health data analysis with ReactJS (frontend) and Node.js (backend)• Built an automated system that verifies UI of a watch app by using Tizen automation framework• Profiled memory usage and revealed possible memory leak of a watch app by using Valgrind• Implemented file transfer via Bluetooth LE in an React Native watch application
08/2012 - 03/2016	Software engineer at Collabora Ltd. in Cambridge, UK <ul style="list-style-type: none">• Developed hardware based compositing based on Clutter in WebKit• Resource efficient web browser based on GNOME Epiphany for Raspberry Pi 2+• Customized WebKit features and API set for Smart TV Alliance SDK
07/2008 - 08/2012	Assistant Software engineer at Samsung Electronics in Suwon, South Korea <ul style="list-style-type: none">• Developed an in-house web layout engine for Smart TVs, Printers in C++• Implemented WebGL and Accelerated Compositing in WebKit EFL by using OpenGL ES for Tizen
07/2007 - 06/2008	Intern at Samsung Software Membership in Suwon, South Korea <ul style="list-style-type: none">• Developed a 3D racing game using DirectX on Windows (video)

Academic Experience

08/2017 - 08/2019	Research assistant at School of Computer Science, Georgia Tech <ul style="list-style-type: none">• Redesign chromium to block user tracking with web browser fingerprints• Debloat chrome browser with feature sunsetting on the fly by binary rewriting• Developed a defense system against micro DDoS by profiling resources with HPC (Intel PCM, MBM)• Implemented an idle profiler that diagnoses off-cpu time in multi-threaded program using HPC
08/2019 - present	Teaching assistant at School of Computer Science, Georgia Tech <ul style="list-style-type: none">• CS 6262: Network Security, Design and Implement the XSS task using node.js and Chrome Extension• CS 6035: Intro to Info Sec

Open Source Projects

04/2013 - present	Committer at WebKit (patches) <ul style="list-style-type: none">• Implement Gamepad API with libmanette• Implement AVIF image decoder with dav1d• Implemented OpenGL ES backend for Accelerated Compositing.• Developed memory pressure handler that copes with out-of-memory on top of Linux cgroup.• Enhance WebGL support and Fix layout and rendering issues• Fix CVE security bugs in WebKit (CVE-2020-10018, CVE-2020-11793)
10/2013 - present	Member at GNOME foundation (patches) <ul style="list-style-type: none">• Translate GNOME Web and its Help document in Korean
01/2015 - present	Contributor at Chromium/Blink (patches) <ul style="list-style-type: none">• Implemented a CSS spec called font-size-adjust• Fix layout and rendering issues in blink

Publication

CCS 2020	Slimium: Debloating the Chromium Browser with Feature Subsetting (paper)
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Patents

US 20110296323	Web page management method and apparatus and storage medium thereof
US 20110289110	Method of re-searching webpage and apparatus and storage medium therefor

US 20110093606	Interface method and display device
US 20110090165	Interface method and display device

Presentations

12/07/2014	Web Engines Hackfest 2014 in A Coruña, Spain (slides)
09/29/2014	DEVIEW 2014 in Seoul, South Korea (slides , video)
04/25/2014	Jeju University in Jeju, South Korea (slides)
10/27/2013	DevOn 2013 in Seoul, South Korea (slides)

Last update : 09/22/2020