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ChangSeok Oh

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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 in Computer Science, **Georgia Tech in Atlanta, GA, U.S.A.** Advisor: Prof. Wenke Lee, Co-Advisor: Prof. Paul Pearce
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 ● Bring ANGLE backend for WebGL to WebKitGTK ● Zero copy texture sharing between Mesa and ANGLE via Linux DMA buffer ● Implement various Web Standards (e.g., AVIF, Gamepad, Form Validation and Web Speech) in WebKit
05/2020 - 08/2020 05/2019 - 08/2019	**Intern at Samsung Research America** in Mountain View, CA ● 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 ● 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 ● 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 ● Developed a 3D racing game using DirectX on Windows (video)

Academic Experience

05/2021 - 08/2021	**Research Intern at Tandon School of Engineering, New York University** ● Research a web privacy issue with Prof. Damon McCoy
08/2019 - 05/2021	**Teaching Assistant at School of Computer Science, Georgia Tech** ● CS 6262: Network Security, Design and Implement the XSS task using node.js and Chrome Extension ● CS 6035: Intro to Info Sec
08/2017 - present	**Research Assistant at School of Computer Science, Georgia Tech** ● 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

Open Source Projects

04/2013 - present	**Committer at WebKit** (patches) ● Implement Web Speech (Text-to-Speech) ● 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) ● Translate GNOME Web and its Help document in Korean
01/2015 - present	**Contributor at Chromium/Blink** (patches) ● 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)

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 : 06/02/2021