ChangSeok Oh

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Summary

A second year ph.d student majoring in computer science at Georgia Tech. Open source enthusiast and hacker specializing in web domain and linux-based system. WebKit and GNOME project contributor. More than 8 years experience at major players in the industry and academy. Interested in opportunities related with web technology and relevant system, system security, computer graphics.

Education

08/2017 - present	**Georgia Tech in Atlanta, GA, U.S.A.** Ph.D student majoring in Computer Science. Advisor: Prof. Taesoo Kim
03/2000 - 06/2008	**Ajou University in Suwon, South Korea** B.E. in Digital Media (intensive major course) B.E. in Information and Computer Engineering (second major)

Research Interests

Web, System, Security, Computer graphics, Open source

Experience

08/2017 - present	**Research assistant at School of Computer Science, Georgia Tech** I have explored diverse research topics related to system and security. Idle profiler I am developing a profiler that identifies idleness for multi-threaded programs. Especially, the profiler focuses on the idleness caused by synchronization primitives (e.g., mutex, spinlock). With this tool, developers can have opportunities in performance optimization. Low-volume DoS attack countermeasure In this project, I designed and implemented a countermeasure against low-volume DoS attacks that exhaust system resources with small volume requests. The defense mechanism continuously watches resource usages (e.g., cpu and memory) per packet per layer, using linux profiling technology such as kprobe/uprobe and eBPF.
06/2016 - 07/2017	**Research associate at School of Computer Science, Georgia Tech** As a research scientist, I contributed to research projects in which Georgia Tech partakes for national interests.
08/2012 - 03/2016	**Software engineer at Collabora Ltd.** Collabora Ltd. is a UK based software consultancy specializing in delivering the benefits of open source to the commercial world. As a software engineer in web domain, I participated in many interesting projects based on WebKit and Chromium/Blink. WebKitClutter port for Apertis Apertis is an IVI system based on linux, driven by Bosch. It was open-sourced later. For the project, I worked on shifting existing features and APIs to WebKit2 multi-process based architecture. Also, improving performance by using OpenGL and multi-threading architecture were my major contributions. (link, patches) GNOME Web (a.k.a Epiphany) for Raspbian

This project aimed to bring full browser experience to Raspberry Pi users using Raspbian, the default OS for Raspberry Pi and one of Debian variation. At that time, I improved performance for playing html5 video and scrolling. In addition, I developed some new features such as Disk Image Cache and Memory Pressure Handler based on linux cgroup memory resource controller. (link)

SDK 2.5, 3.0 and 4.0 for Smart TV Alliance
Smart TV Alliance is a union of TV manufacturers and developers. They provide a SDK including an IDE and an Emulator compliant with each specifications for app developers to test their apps. In this project, I made all webkit changes to meet each requirement of SDK 2.5-4.0.

07/2008 - 08/2012	**Assistant Software engineer at SAMSUNG Electronics.** When I worked for SAMSUNG Electronics, I was in Software Platform Team, DMC R&D Center and performed several research projects. Some of them already went in public as products. WebKitEFL port for TIZEN I contributed to WebGL implementation and hardware acceleration via OpenGL ES. This was an initial effort to add OpenGL ES backend to the WebKit Project. Full browser for SAMSUNG Smart TV 2010 This project brought full browser experience to SAMSUNG Smart TV series released in 2010. My role was to build, integrate and implement UI by using html, css and javascript. Maple, in-house web engine for SAMSUNG connected TVs and all-in-one printers. Maple was an in-house web engine that adopted the SpiderMonkey as javascript interpreter from the Mozilla Gecko engine. I ported the TraceMonkey, a new javascript engine of Gecko into the project.
07/2007 - 06/2008	**Intern at SAMSUNG Software Membership.** Two projects were performed in this period. They were very experimental and related with computer graphics. Also, I developed a 3D train racing game by using DirectX on MS Windows during this period. (video)

Open Source Projects

10/2013 - present	**Member at GNOME foundation** I am a GNOME foundation member because of my contribution to WebKitGTK+. Also, I've translated GNOME Web (a.k.a Epiphany) to Korean and its help document since 2014. (patches)
01/2015 - present	**Contributor at Chromium/Blink** I have been soliciting committership. I have 30 landed patches so far. One of my contribution is to make chromium/blink support the 'font-size-adjust' css property. (patches)
04/2013 - present	**Committer at WebKit** I have contributed WebGL enhancement, hardware acceleration through OpenGL/ES, layout bugfix, memory pressure handler for linux platform and WebKitGTK+ port features such as JPEG-XR decoder, customizable widgets and threaded compositor enhancement. (patches)

Skills

WebKit, Blink/Chromium, GNOME, Linux, C/C++, Python, HTML/CSS/Javascript, Objective-C, OpenGL/OpenGL ES, Clutter, Computer Graphics, GTK+, eBPF, BCC, Ethereum, Git, Clang, LLVM, GStreamer, Tizen, Linux Perf

Presentations

12/07/2014	**Web Engines Hackfest 2014 in A Coruña, Spain** Raspberry Pi Browser by changseok & kov (slides)
09/29/2014	**DEVIEW 2014 in Seoul, South Korea** Lessons from developing a web browser for Raspberry Pi (slides, video)
04/25/2014	**Jeju University in Jeju, South Korea** Introduction to GNOME (slides)
10/27/2013	**DevOn 2013 in Seoul, South Korea** GNOME & You (slides)

Patents

05/25/2011	**Web page management method and apparatus and storage medium thereof** US 20110296323
05/20/2011	**Method of re-searching webpage and apparatus and storage medium therefor** US 20110289110
10/15/2010	**Interface method and display device** US 20110093606
10/15/2010	**Interface method and display device** US 20110090165

Grants

12/2013 - 11/2014	Open Frontier (₩3,000,000 and ₩300,000 per month)

Languages

English	Proficient
Korean	Native

References

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