Yusuke Suzuki

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Research Interests

System software, Web browsers, JIT compilers, Operating systems, Virtual machine technology, Distributed/Parallel systems and Graphic Processing Units (GPUs)

Education

Ph.D. student in Computer Science *Apr. 2015 – (expected Mar. 2018)*
Supervisor: Prof. Kenji Kono Keio University

- Integrating GPUs into system software abstractions and coordinating GPUs and the other devices.

M.E. in Computer Science *Apr. 2013 – Mar. 2015*
Supervisor: Prof. Kenji Kono Keio University
Master Thesis: *Design and Implementation of GPU Virtualization at the Hypervisor*

- Designed open architecture of GPU virtualization using Xen. Built a prototype of fully virtualized GPUs and multiplexed virtualized GPUs.

B.E. in Computer Science *Mar. 2013*
Supervisor: Prof. Kenji Kono Keio University
Bachelor Thesis: *GPU Virtualization for General-purpose computing*

- Investigated GPU internals and interactions between GPUs and OS.

Awards and Honors

Yamashita SIG Research Award *Mar. 2015*
Information Processing Society of Japan

Best Student Presentation Award *Dec. 2013*
SIGOS, Information Processing Society of Japan

Yamauchi Prize for Encouragement *Jan. 2013*
Information Processing Society of Japan

Nakanishi Award *Mar. 2013*
Keio University

Teaching Experience

Teaching Assistant *Apr. 2014 – Sept. 2014*
PROGRAMMING 1, Computer Science Keio University

- Supported for teaching C programming.
- Helped students with programming.
- Graded their reports.

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Work Experience

Research Fellowships of the Japan Society for the Promotion of Science for Young Scientists; DC1 *(expected Apr. 2015 – Mar. 2018)*

Japan Society for the Promotion of Science

Software Engineering Intern *Aug. 2013 – Sep. 2013*

Google Japan Inc.

- At Google Chrome team, developed ECMAScript 6th Promises and optimized XMLHttpRequest Blob transferring. Created 30~ patches and became a Chromium committer.

Part-time Programmer *Oct. 2010 - July 2013*

Cloudstudy Inc.

- Developed iOS application by using Objective-C. And implemented JavaScript modules used on their web service.

Activities

WebKit

Committer

- Contributed to WebKit CSS JIT, that just-in-time compiles CSS selector to machine code to make matching against elements faster. Mainly focused on more intelligent backtrackig. Became a WebKit committer.
- Implemented ES6 Symbol into JavaScriptCore and now improving it.

Chromium

Committer

- Worked on Google Chrome and Blink as software engineering intern as `yusukesuzuki@chromium.org`.
- Improved Blob data handling in XMLHttpRequest.
- Landed the initial implementation of ES6 Promises in the Blink side.

iv/lv5

Building ECMAScript engine from scratch https://github.com/Constellation/iv

- Built the new ECMAScript engine that conforms ECMA262 5.1th spec.
- Found and reported many bugs in the spec and Test262 conformance suite.
- Implemented baseline JIT compiler for x86_64 environment including Inline Caches.

Escodegen, Esmangle, Estraverse etc.

ECMAScript language tools https://github.com/estools/escodegen

- Built an infrastructure of ECMAScript tools using Mozilla JavaScript AST.

Computer Skills

Languages: ECMAScript, Python, CSS Selectors, C, C++, x86, x86_64 assembly language

Platforms: Linux, OSX

Publications

Refereed Papers

Suzuki, Y., Kato, S., Yamada, H., and Kono, K. GPUvm: Why Not Virtualizing GPUs at the Hypervisor?. In *Proceedings of the 2014 USENIX Annual Technical Conference (USENIX ATC '14)*, pages 109–120, June 2014.

Non-Refereed Papers

Suzuki, Y., Kato, S., Yamada, H., and Kono, K. GPU の完全仮想化. Summer United Workshops on Parallel, Distributed and Cooperative Processing (SWoPP '13), pages 195–202, July 2013.

Suzuki, Y. Escodegen and Esmangle: Using Mozilla JavaScript AST as an IR. Industry Track of Aspect-Oriented Software Development (AOSD '13), Mar. 2013.

Non-Refereed Posters

Suzuki, Y., Kato, S., Yamada, H., and Kono, K. Design and Implementation of GPU Virtualization at the Hypervisor. JSSST Dependable System Workshop (DSW '14), Mar. 2014.

Suzuki, Y., Kato, S., Yamada, H., and Kono, K. GPUvm: ハイパーバイザによる GPU の完全仮想化手法. JSSST Dependable System Workshop (DSW '13), Dec. 2013.

Suzuki, Y. Building modern JavaScript Engine. 2012 IPSJ Programming Symposium, Jan. 2012.