

# Yusuke Suzuki

1-6-11 Hiyoshi, Kohoku-ku, Yokohama,  
Hiyoshi-Toiwadai-Corpo 507  
223-0061, JAPAN

utatane.tea@gmail.com  
yusuke.suzuki@sslabs.ics.keio.ac.jp  
<https://constellation.github.io/>  
+81-80-6118-4332

**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 backtracking. 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](mailto:yusukesuzuki@chromium.org).
- Improved Blob data handling in XMLHttpRequest.
- Landed the initial implementation of ES6 Promises in the Blink side.

### iv/1v5

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.** Escriptgen 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.