# DR. KOICHI SASADA

http://www.atdot.net/~ko1/

https://github.com/ko1/

## CARRIER SUMMARY

Koichi Sasada is a programmer, mainly developing Ruby interpreter (CRuby/MRI). He received Ph.D (Information Science and Technology) from the University of Tokyo, 2007. He became a faculty of University of Tokyo (Assistant associate 2006-2008, Assistant professor 2008-2012). After the 13 years life in university, he had joined a member of Matz's team in Heroku, Inc. Now he is a member of Cookpad Inc (engineer). He is also a director of Ruby Association.

## PERSONAL DATA

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| Full Name (in Japanese) | 笹田耕一 |
| Date of Birth | 20 November 1979 |
| Nationality | Japanese |

## EDUCATION

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|---|---|
| 12/2007 | PhD in Information Science and Engineering, The University of Tokyo<br>*"Efficient Implementation of Ruby Virtual Machine"* |
| 03/2004 | Master Degree in Engineering, Tokyo University of Agriculture and Technology<br>*"A study of Systems Software for Multithreaded Architecture"* |
| 03/2003 | Bachelor Degree in Engineering Tokyo University of Agriculture and Technology<br>*"Implementation and Evaluation of a Thread Library for Multithreaded Architecture"* |

## PROFESSIONAL CAREER

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|---|---|
| 01/2017- | Engineer at Cookpad Inc. |
| 04/2012-01/2017 | SMTS at Heroku, Inc (Salesforce.com) |
| 02/2008-04/2012 | Assistant professor at Graduate School of Information Science and Technology, The University of Tokyo |
| 04/2006-02/2008 | Assistant Associate at Graduate School of Information Science and Technology, The University of Tokyo |

## ACADMIC WORK EXPERIENCE

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|---|---|
| 01/2018-03/2019 | Programming and Programming Languages (PPL 2019) PC co-chair |
| 09-11/2010 | Visiting Researcher at Sheffield Halam University |
| 07/2004-03/2005 | Research Assistant at Tokyo University of Agriculture and Technology |

## HONORS AND AWARDS

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| 05/2016 | Ruby Hero Awards |
| 01/2016 | IPSJ Yamashita SIG Research Award for our paper "Implementation of a generational incremental garbage collector with write barrier unprotected objects on Ruby" |
| 04/2010 | Funai Research Encouragement Award |
| 11/2008 | 1st Rakuten technology award: Ruby Award |
| 10/2008 | 7th North-East Asia OSS Promotion Forum: CJK OSS Award |
| 05/2008 | 4th IPA (Information-Technology Promotion Agency, Japan) Award (OSS category) |
| 10/2007 | IPA Open Source Contributor Award |
| 05/2005 | IPA ESP: Accreditation of super creator for development of YARV (Virtual machine for Ruby) |

## PROFESSIONAL AFFILIATIONS

IPSJ        Information Processing Society of Japan
ACM      Association for Computing Machinery

## OSS/RUBY ACTIVITIES

2013       Introduce generational garbage collector into Ruby 2.1
2007       Committer of Ruby interpreter (VM maintainer) and introduce
            Virtual Machine (YARV) into Ruby 1.9
2006-2011  RubyKaigi 2006, 2007, 2008, 2009, 2010, 2011: Program chair
2004       YARV: Yet Another RubyVM

## RESEARCH INTERESTS

- Programming language processor (Compiler and Interpreter), especially for dynamic languages such as programming language Ruby. The YARV virtual machine was designed by us for Ruby and was merged into official Ruby interpreter (Ruby 1.9 or later).
- Programming language runtimes such as Garbage collection and thread mechanisms.
- Parallel processing systems with multi-core, many-core processor and multi-threaded processor. For example, "easy" parallel scripting language for productive parallel programming.
- Operating systems for real-time embedded systems.
- Virtual machine monitor and thin-client systems.

## RESEARCH GRANTS

| | |
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| 2011 | X10 Innovation Awards: Scripting on X10 - Ruby Script to X10 Program Translator |
| 2010 | Google Research Awards: Ruby Interpreter for Embedded Environment |
| 2009-2011 | Japanese Ministry of Education, Science, Sports and Culture, Grant-in-Aid for Young scientists (B) |
| 2007-2008 | Japanese Ministry of Education, Science, Sports and Culture, Grant-in-Aid for Young scientists (Startup) |
| 2006 | IPA (Information-Technology Promotion Agency, Japan) MITOH Project (ESP: Exploratory Software Project) |
| 2005 | IPA MITOH Project (ESP) |
| 2004 | IPA MITOH Project Youth (ESP Youth) |

# REVIEWED PAPERS

- Koichi Sasada, Shohei Urabe, Yukihiro Matsumoto, Kei Hiraki: "Parallel Processing on Multiple Virtual Machine for Ruby" (in Japanese), IPSJ Transactions (PRO), Vol.5, No.2, pp.25-42 (2012.3).
- Koichi Sasada: Ricsin: A System for "C Mix-in to Ruby" (in Japanese), IPSJ Transactions (PRO), Vol.2, No.2, pp.13-26 (2009.3).
- Koichi Sasada, Yukihiro Matsumoto, Atsushi Maeda, Mitaro Namiki: An Implementation of Parallel Threads for YARV: Yet Another RubyVM (in Japanese), IPSJ Transactions (PRO), Vol.48, No.SIG10(PRO33), pp.1-16 (2007).
- Koichi Sasada, Yukihiro Matsumoto, Atsushi Maeda, Mitaro Namiki: YARV: Yet Another RubyVM -- The Implementation and Evaluation (in Japanese), IPSJ Transactions (PRO), Vol.47, No.SIG 2(PRO28),  pp.57-73 (2006.2).
- Koichi Sasada, Mikiko Sato, Kaname Uchikura, Yoshiyasu Ogasawara, Hironori Nakajo, Mitaro Namiki: A Lightweight Synchronization Mechanism for an SMT Processor Architecture (in Japanese), IPSJ Transactions (ACS), Vol.46, No.SIG16(ACS12), pp.14-27 (2005.12).
- Koichi Sasada, Mikiko Sato, Shoji Kawahara, Norito Kato, Masanori Yamato, Hironori Nakajo, Mitaro Namiki: Implementation and Evaluation of a Thread Library for Multithreaded Architecture (in Japanese), IPSJ Transactions (ACS), Vol.44, No.SIG11(ACS3), pp.215-225 (2003.9).

# PRESENTATIONS AT INTERNATIONAL CONFERENCE

See http://www.atdot.net/~ko1/activities/#idx3