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Born: March 4, 1982—Osaka, Japan

Nationality: Japan

Current position

Assistant Professor, Department of Mathematical and Computing Sciences, Tokyo Institute of Technology, Japan

Areas of specialization

Computer Science; Design and Implementation of Programming Languages for Advanced Modularity.

Appointments held

2009-2010 JSPS Research fellow (DC2), University of Tokyo, Japan
2010-2013 Assistant Professor, JAIST (Japan Advanced Institute of Technology), Japan

Education

2006 MSc in Arts and Sciences, University of Tokyo, Japan
2009 PhD in Arts and Sciences, University of Tokyo, Japan

Grants, honors & awards

GRANTS

2008-2009 JSPS KAKENHI Grant Number 08J11378
2011-2014 JSPS KAKENHI Grant Number 23700033

AWARDS

- 2015 Best paper award from JSSST (Japan Society for Software Science and Technology)
2009 Ichiko-Award from University of Tokyo

Publications & talks

JOURNAL ARTICLES (REFEREED)

- 2015 Tetsuo Kamina, Tomoyuki Aotani and Hidehiko Masuhara. "Context-Oriented Software Development with Generalized Layer Activation Mechanism", LNCS Transactions on Aspect-Oriented Software Development (to appear).
- 2015 Izumi Asakura, Hidehiko Masuhara and Tomoyuki Aotani. "Proof of Soundness of Concurrent Separation Logic for GPGPU in Coq", IPSJ Transaction on Programming (to appear).
- 2013 Tomoyuki Aotani, Tetsuo Kamina and Hidehiko Masuhara. "EventCJ: a context-oriented language with declarative per-object layer transitions", Computer Software (JSSST journal), Vol.30, No.3, pages 130-147 (in Japanese).
- 2013 Tetsuo Kamina, Tomoyuki Aotani and Hidehiko Masuhara. "Introducing composite layers in EventCJ", IPSJ Transaction on Programming, Vol.6, No.1, pp.1-8.
- 2009 Tomoyuki Aotani and Hidehiko Masuhara. "Towards a type System for safe execution of AspectJ advice", Computer Software (JSSST journal), Vol.26(2), pp170-182 (in Japanese).
- 2006 Tomoyuki Aotani and Hidehiko Masuhara. "A compilation framework for aspect-oriented programs with pointcuts using user-defined program analysis", Computer Software (JSSST journal), Vol.23(2), pp157-167 (in Japanese).

CONFERENCE PAPER (REFERRED)

- 2015 Tomoyuki Aotani, Tetsuo Kamina and Hidehiko Masuhara. "Type-Safe Layer-Introduced Base Functions with Imperative Layer Activation", *Proceedings of international workshop on Context-Oriented Programming (COP'14)*, Article No.8.
- 2015 Tetsuo Kamina, Tomoyuki Aotani, Atsushi Igarashi and Hidehiko Masuhara. "Method Safety Mechanism for Asynchronous Layer Deactivation", *Proceedings of international workshop on Context-Oriented Programming (COP'14)*, Article No.6.
- 2015 Tetsuo Kamina, Tomoyuki Aotani and Hidehiko Masuhara. "Generalized Layer Activation Mechanism Through Contexts and Subscribers", *Proceedings of international conference on Modularity (MODULARITY'15)*, pages 14-28.

2014

- Tomoyuki Aotani, Tetsuo Kamina and Hidehiko Masuhara. “Unifying Multiple Layer Activation Mechanisms Using One Event Sequence”, *Proceedings of international workshop on Context-Oriented Programming (COP’14)*, Article No.2.
- 2014 Tetsuo Kamina, Tomoyuki Aotani, and Atsushi Igarashi. “On-Demand Layer Activation for Type-Safe Deactivation”, *Proceedings of international workshop on Context-Oriented Programming (COP’14)*, Article No.4.
- 2014 Naoya Murakami, Hidehiko Masuhara, and Tomoyuki Aotani. “Code recommendation based on a degree-of-interest model”, *Proceedings of international workshop on Recommendation Systems in Software Engineering (RSSE 2014)*, pp.28–29.
- 2014 Tomoyuki Aotani, Tetsuo Kamina, and Hidehiko Masuhara. “Context holders: realizing multiple layer activation mechanisms in a single context-oriented language”, *Proceedings of international workshop on Foundations of Aspect-Oriented Languages (FOAL’14)*, pp.3–6.
- 2014 Tetsuo Kamina, Tomoyuki Aotani, Hidehiko Masuhara, and Tetsuo Tamai. “Context-Oriented Software Engineering: A Modularity Vision”, *Proceedings of international conference on Modularity (MODULARITY’14)*, pp.85–98. 2014.
- 2013 Tetsuo Kamina, Tomoyuki Aotani, and Hidehiko Masuhara. “A unified context activation mechanism”, *Proceedings of international workshop on Context-Oriented Programming (COP’13)*, Article No.2.
- 2013 Tetsuo Kamina, Tomoyuki Aotani, and Hidehiko Masuhara. “A core calculus of composite layers”, *Proceedings of international workshop on Foundations of Aspect-Oriented Languages (FOAL’13)*, pp.7–12.
- 2013 Takeshi Kojima and Tomoyuki Aotani. “Hierarchical concern-based pointcuts”, *Proceedings of international workshop on advanced modularization techniques (AOAsia’13)*, pp.19–22.
- 2013 Lin Wang, Tomoyuki Aotani and Masato Suzuki, “Feature selection for clustering based aspect mining”, *Proceedings of international workshop on Variability & Composition (VariComp’13)*, pp.7–12.
- 2012 Tetsuo Kamina, Tomoyuki Aotani and Hidehiko Masuhara. “Bridging real-world contexts and units of behavioral variations by composite layers”, *Proceedings of international workshop on Context-Oriented Programming (COP’12)*, pp.1–6.
- 2012 Manabu Toyama, Tomoyuki Aotani and Hidehiko Masuhara, “A per-type instantiation mechanism for generic aspects”, *Proceedings of international workshop on Variability & Composition (VariComp’12)*, pp.25–30.
- 2011

- Tetsuo Kamina, Tomoyuki Aotani and Hidehiko Masuhara. “EventCJ: A Context-Oriented Programming Language with Declarative Event-based Context Transition”, *Proceedings of international conference on Aspect-Oriented Software Development (AOSD 2011)*, pp.253–264.
- 2011 Tomoyuki Aotani, Tetsuo Kamina and Hidehiko Masuhara. “Featherweight EventCJ: a core calculus for a context-oriented language with event-based per-instance layer transition”, *Proceedings of international workshop on Context-Oriented Programming (COP’11)*, pp.1–7.
- 2011 Fan Yang, Hidehiko Masuhara, Tomoyuki Aotani, Flemming Nielson, and Hanne Riis Nielson. “Combining static analysis and runtime checking in security aspects for distributed tuple spaces”, *Proceedings of international conference on Coordination models and languages (COORDINATION’11)*, pp.202–218.
- 2010 Tetsuo Kamina, Tomoyuki Aotani and Hidehiko Masuhara. “Designing Event-based Context Transition in Context-oriented Programming”. In *Proceedings of the 2nd International Workshop on Context-oriented Programming 2010 (COP’10)*, pp.1–6.
- 2010 Fan Yang, Hidehiko Masuhara, Tomoyuki Aotani, Flemming Nielson and Hanne Riis Nielson. “AspectKE*: Security Aspects with Program Analysis for Distributed Systems”. In *Proceedings of Aspects, Components, and Patterns for Infrastructure Software (ACP4IS’10)*, pp.27–31.
- 2010 Tomoyuki Aotani, Manabu Touyama and Hidehiko Masuhara. “StrongRelaxAJ: integrating adaptability of RelaxAJ and expressiveness of StrongAspectJ”. *Foundations of Aspect-Oriented Languages (FOAL2010)*, pp.1–4.
- 2009 Tomoyuki Aotani and Hidehiko Masuhara. “A Join Point Model for Implicit Conversion”. In *Proceedings of the 5th Asian Workshop on Aspect-Oriented Software Development (AOAsia 5)*, pp.35–37.
- 2007 Tomoyuki Aotani and Hidehiko Masuhara. “Towards a type system for detecting never-matching pointcut compositions”. In *Proceedings of the 6th workshop on Foundations of Aspect-Oriented Languages*, pp.23-26.
- 2007 Tomoyuki Aotani and Hidehiko Masuhara. “SCoPE: an AspectJ compiler for supporting user-defined analysis-based pointcuts”. In *Proceedings of the 6th International Conference on Aspect-Oriented Software Development*, pp.161-172.
- 2006 Hidehiko Masuhara and Tomoyuki Aotani. “Issues on Observing Aspect Effects from Expressive Pointcuts” the 20th European Conference on Object-Oriented Programming (ECOOP2006) workshop on Aspects, Dependencies and Interactions, pp.53-61.
- 2005

Tomoyuki Aotani and Hidehiko Masuhara. “Compiling Conditional Pointcuts for User-Level Semantic Pointcuts”, Workshop on Software-engineering Properties of Languages and Aspect Technologies (SPLAT ’05).

Teaching

2011–2012 Data structures and algorithms (I111) in JAIST
2013–2015 Introduction to Computer Science (5526) in Tokyo Institute of Technology
2013–2015 Computer Science II (5528) in Tokyo Institute of Technology

Service to the profession

- COP’16, PC member
- COP’15, PC member
- AOAsia/Pacific’14, Organizing chair
- COP’14, Organizing chair
- COP’13, PC member
- AOAsia/Pacific’13, Organizer & PC member
- AOSD’13, Workshop Co-chair
- PPL2013, PC member
- FOAL2012, PC member
- DSL’11, External reviewer
- AOAsia/Pacific’11, Organizer & PC member
- COP’11, External reviewer
- AOAsia6 (2010), General chair
- IPSJ SIG-SE Organizing committee member (2011–Current)
- AOAsia/Pacific’10, Organizer
- DSL(Dynamic Languages Symposium)’10, External reviewer
- AOSD’10, External reviewer
- AOSD’09 Spring School, Teaching Assistant
- AOSD’09, External reviewer
- AOSD’08, Student volunteer

- AOSD'08, External reviewer
- APLAS'07, External reviewer
- AOSD'07, External reviewer
- APSEC'07, External reviewer
- AOSD'06, External reviewer