

# Jieung Kim

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## Ph.D Student

FLINT Group  
Department of Computer Science  
Yale University

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## RESEARCH INTEREST

- Program Verification
- Verified Operating Systems and Distributed Systems
- Concurrency Verification
- Compositional Software Verification and Analysis
- Programming Language Design
- Proof Assistants and Automated Proof
- Relaxed Memory Model

## WORK EXPERIENCE

### Research Assistant

09/2011 ~ 06/2012

Programming Language Research Group  
Department of Computer Science  
Korea Advanced Institute of Science and Technology

## EDUCATION

### Ph.D Student in Computer Science

09/2012 ~ Current

Department of Computer Science  
Yale University

Advisor: *Zhong Shao*

### M.S. in Computer Science

09/2009 ~ 08/2011

Department of Computer Science  
Korea Advanced Institute of Science and Technology

Thesis: *Proving FFMM Type Safety Using Coq*

Advisor: *Sukyoungh Ryu*

### B.S. in Engineering

03/2002 ~ 08/2009

Department of Computer Engineering  
School of Information and Communication Engineering  
Sung Kyun Kwan University

Scholarships: *Full scholarships for 3 semesters and 1 half scholarship*

## PUBLICATIONS

### CONFERENCE

Ronghui Gu, Zhong Shao, **Jieung Kim**, Xiongnan (Newman) Wu, Jérémie Koenig, Vilhelm Sjöberg, Hao Chen, David Costanzo, and Tahina Ramananandro, Certified Concurrent Abstraction Layers, *In Proc. 2018 ACM SIGPLAN Conference on Programming Language Design and Implementation*, June 2018.

**Jieung Kim**, Vilhelm Sjöberg, Ronghui Gu, and Zhong Shao, Safety and Liveness of MCS Lock—Layer by Layer, *Proceedings of the 15th Asian Symposium on Programming Languages and Systems*, November 2017.

Ronghui Gu, Zhong Shao, Hao Chen, Xiongnan (Newman) Wu, **Jieung Kim**, Vilhelm Sjöberg, and David Costanzo, CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels, *12th USENIX Symposium on Operating Systems Design and Implementation (OSDI 16)*, November 2016.

**Jieung Kim**, Sukeyoung Ryu, Victor Luchangco, and Guy L. Steele Jr., Fine-Grained Function Visibility for Multiple Dispatch with Multiple Inheritance, *Proceedings of the 11th Asian Symposium on Programming Languages and Systems*, December 2013.

**Jieung Kim** and Sukeyoung Ryu, Coq Mechanization of Featherweight Fortress with Multiple Dispatch and Multiple Inheritance, *The First International Conference on Certified Programs and Proofs*, December 2011.

TECHNICAL  
REPORT

**Jieung Kim** and Sukeyoung Ryu, Coq Mechanization of Featherweight Basic Core Fortress for Type Soundness, *Technical Report (ROSAEC-2011-011)*, May 2011.

POSTER

Ronghui Gu, Zhong Shao, Hao Chen, Xiongnan (Newman) Wu, **Jieung Kim**, Vilhelm Sjöberg, and David Costanzo, CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels, *12th USENIX Symposium on Operating Systems Design and Implementation (OSDI 16)*, November 2016.

TALKS

Multicore and Multithreaded Linking for Concurrent CertiKOS, *DeepSpec Workshop @ Conference on Programming Language Design and Implementation*, June 2018.

Safety and Liveness of MCS Lock—Layer by Layer, *Proceedings of the 15th Asian Symposium on Programming Languages and Systems*, November 2017.

CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels, *Sung Kyun kwan University, South Korea*, November 2017.

CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels, *Electronics and Telecommunications Research Institute, South Korea*, August 2017.

(**Poster Talk**) CertiKOS: An Extensible Architecture for Building Certified Concurrent OS Kernels, *12th USENIX Symposium on Operating Systems Design and Implementation (OSDI 16)*, November 2016.

Fine-Grained Function Visibility for Multiple Dispatch with Multiple Inheritance, *Proceedings of the 11th Asian Symposium on Programming Languages and Systems*, December 2013.

Coq Mechanization of Featherweight Fortress with Multiple Dispatch and Multiple Inheritance, *The First International Conference on Certified Programs and Proofs*, December 2011.

Coq Mechanization of Featherweight Fortress with Multiple Dispatch and Multiple Inheritance, *SIGPL Korea 2011 Conference*, September 2011.

TEACHING  
EXPERIENCE

**Teaching Assistant**

**Fall 2016**

[CS 458/558] Automatic Decision Systems  
Department of Computer Science, Yale University

Lecturer: Stephen Slade

**Teaching Assistant** **Spring 2016**  
 [CS 424/524] Parallel Programming Techniques  
 Department of Computer Science, Yale University  
 Lecturer: Andrew Sherman

**Teaching Assistant** **Fall 2015**  
 [CS 201] Introduction to Computer Science  
 Department of Computer Science, Yale University  
 Lecturer: Stephen Slade

**Teaching Assistant** **Spring 2015**  
 [CS 201] Introduction to Computer Science  
 Department of Computer Science, Yale University  
 Professor: Dana Angluin

**Teaching Assistant** **Fall 2014**  
 [CS 201] Introduction to Computer Science  
 Department of Computer Science, Yale University  
 Professor: Holly Rushmeier

**Teaching Assistant** **Spring 2014**  
 [CS 112] Introduction to Programming  
 Department of Computer Science, Yale University  
 Professor: Yang Yang

**Teaching Assistant** **Fall 2013**  
 [CS 112] Introduction to Programming  
 Department of Computer Science, Yale University  
 Professor: Drew McDermott

**Organizer and Lecturer** **06/2011**  
 Coq Summer Workshop @ KAIST  
 Programming Language Research Group  
 Department of Computer Science  
 Korea Advanced Institute of Science and Technology

**Teaching Assistant** **12/2010 ~ 05/2011**  
 T.A for Undergraduate Research Project (URP) Program  
 Department of Computer Science  
 Korea Advanced Institute of Science and Technology  
 Topic: *Biograph Library in Coq*  
 (Grand Prix at 2011 Winter / Spring Semester URP Competition)

AWARDS

**Robert Willets Carle Scholarship Fund #2** **01/2015**  
 Department of Computer Science, Yale University

**Doctoral Fellowship** **Fall 2012 - Spring 2013**

Department of Computer Science, Yale University

**An Outstanding MS Thesis** 02/2012

Department of Computer Science,  
Korea Advanced Institute of Science and Technology

ACTIVITIES

**Summer School Participant** 07/2017

1st DeepSpec Summer School, University of Pennsylvania

**Korean Translation Team Member** 09/2010

Racket IDE  
with Jae sung Chung, Yujeong Cho, and Sung-Gyeong Bae

**Summer School Participant** 06/2010

10th Annual Oregon Programming Languages Summer School, University of Oregon

**Representative of Graduate Students** 01/2010 ~ 12/2010

Department of Computer Science  
Korea Advanced Institute of Science and Technology

**Mobile Text Viewer Development Team Member** 01/2009 ~ 03/2009

Project name: [LG Electronics] Mobile Text Viewer  
Winter of Code 2008, Openmaru

OTHER  
ACTIVITIES

**Director** 09/2014 ~ 08/2015

Korean Graduate Student Association at Yale  
Yale University

**President** 09/2013 ~ 08/2014

Korean Graduate Student Association at Yale  
Yale University

**Lifeguard** 06/2005 ~ 08/2005

Pool lifeguard at Camp Long and Eagle of U.S. Army in Republic of Korea

**Military Service** 06/2004 ~ 06/2006

Sergeant in AREA Platoon, Bravo Company, 304th Signal Battalion  
1st Signal Brigade, 8th U.S. Army, KATUSA

**Advanced Open Water Diver** 02/2004

Diver number: 0403U16850, Issued by PADI