

# Zhiqiang Ren

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## Research Interests

- Formal verification of critical software system.

## Education

- **Ph.D. Candidate**, Computer Science, Boston University 09/2009 ~ now

Topic: Combining Type Checking and Model Checking for Program Verification

Advisor: Dr. Hongwei Xi

- **M.E.**, Communication and Information System, Shanghai Jiao Tong University 09/2003 ~ 03/2006

Thesis: Authentication Scheme to Frustrate DDoS

- **B.E.**, Electronic Engineering, Shanghai Jiao Tong University 09/1999 ~ 06/2003  
Minor in Applied Mathematics

## Awards

- **02/2008 Member of the “Golden Team of 2007” of Huawei Technologies Co., Ltd.:** Awarded by Huawei Technologies Co., Ltd. for top 10% R&D teams.
- **1999 ~ 2002 People’s Academic Scholarship:** Scholarship Awarded by Shanghai Jiao Tong University for excellence in academics.

## Professional Experience

- **Huawei Technologies Co., Ltd.** Shanghai, China 04/2006 ~ 04/2008

**Department:** Shanghai Research Institute, OM Research Department

**Job Title:** Software Engineer

**Description:** Development of Integrated Script Platform for Network Element Maintenance (iSStar)

- ✧ Co-designed and co-implemented of HSL (High Level Script Language for Huawei Co.).
- ✧ Designed and implemented HSL Runtime Environment on Windows, Solaris and Linux.
- ✧ Designed and implemented Python-base CORBA client.
- ✧ Workstation (Development and Test purpose) maintenance.

## Publications

- **Zhiqiang Ren** and Hongwei Xi, “A Programmer-Centric Approach to Program Verification in ATS”, Automated Reasoning in Security and Software Verification (Workshop with CADE24), Lake Placid, New York, June 2013.
- **Zhiqiang Ren**, “Authentication Scheme to Frustrate DDoS That Mimic Normal Service Requests.” Journal of China Information Security, Aug. 2006

## Presentation

- **Boston University**, Distributed System Group, “Combine Type Checking with Model Checking”, Boston, MA, April, 2014
- **Shanghai Jiao Tong University**, SJTU-BASICS (Basics Studies in Computer Science) lab, “A Programmer-Centric Approach to Program Verification in ATS”, Shanghai, China, May, 2013

## Academic Experience

- **Boston University, Computer Science Department**
  - ✧ Equip ATS programming language with primitives for concurrent programming, build corresponding model checker for the verification of ATS programs.
  - ✧ Built interpreter for ATS (ML like functional programming language with highly expressive type system).
  - ✧ Research on building verifiably correct FAT32-like file system in Linux using ATS.
  - ✧ Research on combining programming with light weight theorem proving via type checking.

## Teaching Experience

- **Teaching Fellow**, Boston University

Role: Taught lab sessions; led discussion sessions; held office hours; contributed to written homework, lab assignments, exam questions, and solutions; graded written assignments and software projects.

- ✧ Concepts of Programming Languages (Fall 2014, Summer 2014, Spring 2013, Summer 2010)
- ✧ Artificial Intelligence (Spring 2014, Spring 2012)
- ✧ Introduction to Computer Networks (Fall 2013)
- ✧ Introduction to Computer Science (Spring 2011)
- ✧ Application Programming (Fall 2010)

## Professional Activities

- Reviewer for the ACM SIGPLAN ML Family Workshop, 2014 (with advisor)
- Reviewer for 12th Asian Symposium on Programming Languages and Systems, 2014 (with advisor)