

# Konstantin Weitz

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## Education & Research Interest

I'm a PhD student in Computer Science at the University of Washington, expecting to graduate at the beginning of 2017. My research is focused on **Applying Programming Language Techniques to Systems**. My advisers are Michael D. Ernst and Zachary Tatlock.

- **M.S.** Computer Science and Engineering, University of Washington (GPA 3.83, 2014)
- **B.S.** Applied Computer Science, Baden-Wuerttemberg Cooperative State University (GPA 4.0, 2012)

## Experience

- **PhD Research** experience:
  - **BGP Policy Verification:** I built Bagpipe, a tool which enables an ISP to express Border Gateway Protocol policies in a domain-specific language, and which automatically verifies that the policies are correctly implemented by the ISP's router configurations.
  - **SQL Optimization Verification:** I developed a formalism and tool to verify SQL Query Optimizations.
  - **A Type System for Format Strings:** I developed and implemented a type system that prevents invalid format method (e.g. printf) invocations in Java programs.
- **Google** intern adding a dataflow analysis to the internal bug finding tool (error-prone). The analysis is run on every Java commit within Google (3 months, 2014).
- **VMware** intern investigating improvements to the memory management of the ESX virtual machine hypervisor (3 months, 2013).
- **IBM** employee working on:
  - **Linux Kernel** improvements to KVM for IBM's mainframe architecture. The code is part of the Linux distribution, commits 41628d3, b31288f, and 4596172 (8 months, 2010/2012).
  - **Database Research** at the Almaden Research Center, San Jose (4 months, 2011).
  - **JEE Application Development** for a major insurance company (3 months, 2011).
  - **Consulting** for information management software (1 month, 2009).
- **Apache Flink** researcher with the TU Berlin, implementing a join algorithm (1 year, 2011-2012).
- **Internet Service Provider** volunteer for my undergraduate university (2 years, 2010-2012).

## Technical Proficiency

- **Programming Languages** include C/C++, Java, Python, JavaScript, XML, SQL, Isabelle/HOL, Coq, Haskell
- **Systems and Frameworks** include Docker, Maven, Checker Framework, Git, Vim, Eclipse, ipython, LaTeX, Linux, Android, Apache, JBoss, PostgreSQL, Hadoop, OpenStack, Inkscape, MS/Libre Office

## Selected Publications

- Konstantin Weitz, Gene Kim, Siwakorn Srisakaokul, and Michael D. Ernst. *A type system for format strings*. ISSTA 2014.
- Daniel Halperin, Francois Ribalet, Konstantin Weitz, Mak A. Saito, Bill Howe, and E. Virginia Armbrust. *Real-time collaborative analysis with (almost) pure SQL*. SSDBM 2013.