

# Jörg Thalheim

RESEARCHER

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## Research Interests

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My research interests lie in the broad area of computer systems, including distributed systems, operating systems, and file-systems.

## Education

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### The University of Edinburgh

PH.D. IN COMPUTER SCIENCE

- **Group:** Institute for Computing Systems Architecture (ICSA)
- **Advisor:** Prof. Pramod Bhatotia

Edinburgh, UK

Sep. 2017 - present

### TU Dresden

DIPLOMA IN INFORMATION SYSTEMS ENGINEERING

- GPA of Thesis (Diplom): 1.3
- Advanced Courses: Systems Engineering & Communications Networks

Dresden, Germany

Sep. 2011 - Feb. 2017

## Experience

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### Microsoft Research

RESEARCH INTERNSHIP

- **Project:** Intel Processor Trace Based Root Cause Analysis
- **Mentor:** Dr. Baris Kasikci

Cambridge, UK

May 2017 - August 2017

### Bell Labs

RESEARCH INTERNSHIP/THESIS

- **Project:** Sieve: Towards Actionable Insights from Monitored Metrics in Microservices
- **Mentor:** Dr. Bimal Viswanath

Stuttgart, Germany

March 2016 - July 2016

### TU Dresden

RESEARCH ASSISTANT IN PARALLEL AND DISTRIBUTED SYSTEMS GROUP

- **Project #1:** Inspector — Data provenance for multithreaded programs using Intel Processor Trace (Intel PT)
- **Project #2:** Cntr — Lightweight OS containers
- **Advisor:** Dr. Pramod Bhatotia

Dresden, Germany

September 2015 - Feb 2017

### Whisp GmbH

SOFTWARE ENGINEER & FOUNDER

- Recommendation platform driven by user opinions
- Ruby on Rails based API
- Server administration
- Android development

Dresden, Germany

January 2013 - January 2015

### FSD Fahrzeugsystemdaten GmbH

ASSISTANT

- Development of a generic car anti shock test
- Taking and evaluating measurements

Dresden, Germany

January 2011 - August 2011

## Publications

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### SPEICHER: Securing LSM-based Key-Value Stores using Shielded Execution

MAURICE BAILLEU, JÖRG THALHEIM, AND PRAMOD BHATOTIA, CHRISTOF FETZER, MICHIO HONDA, KAPIL VASWANI

- **USENIX FAST 2019**

Boston, MA

2018

### CNTR: Lightweight OS Containers

JÖRG THALHEIM, PRAMOD BHATOTIA, PEDRO FONSECA, BARIS KASIKCI

- **USENIX ATC 2018**
- Project Page: <https://github.com/Mic92/cntr>

Boston, MA

2018

### Sieve: Towards Actionable Insights from Monitored Metrics in Microservices

JÖRG THALHEIM, ANTONIO RODRIGUES, BIMAL VISWANATH, ISTEMI EKIN AKKUS, PRAMOD BHATOTIA, RUICHUAN CHEN, LEI

JIAO, AND CHRISTOF FETZER

- **ACM/IFIP/USENIX Middleware 2017**
- Project Page: <https://sieve-microservices.github.io/>

Las Vegas (USA)

2017

### OS Containers on Diet using Cntr

JOERG THALHEIM, FRANZ GREGOR, PRAMOD BHATOTIA, AND CHRISTOF FETZER

- **USENIX OSDI'16 (Work-in-progress)**
- Project Page: <https://github.com/Mic92/cntr>

Savannah (USA)

2016

## Inspector: Data Provenance using Intel Processor Trace (PT)

JOERG THALHEIM, PRAMOD BHATOTIA, AND CHRISTOF FETZER

• IEEE ICDCS'16

• Project Page: <https://github.com/Mic92/inspector>

Nara (Japan)

2016

## Talks

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### ATC'18

CONFERENCE TALK

CNTR: Lightweight OS Containers

Boston, MA (USA)

July 2018

### KLEE Workshop 2018

CONFERENCE TALK

HASE: Hardware-Assisted Symbolic Execution

London (UK)

April 2018

### Middleware'17

CONFERENCE TALK

Sieve: Towards Actionable Insights for Monitored Microservices

Las Vegas (USA)

December 2017

### Microsoft Research

INTERNSHIP PRESENTATION

Guided Symbolic Execution Using Hardware Traces

Cambridge (UK)

Jul. 2017

### TU Dresden

THESIS DEFENSE

Sieve: Towards Actionable Insights for Monitored Microservices

TU Dresden (Germany)

Feb. 2017

### ICDCS'16

CONFERENCE TALK

INSPECTOR: Data Provenance using Intel Processor Trace (PT)

Nara (Japan)

Jun. 2016

### Bell Labs

INTERNSHIP PRESENTATION

Autoscaling of Microservices

Stuttgart (Germany)

Jul. 2016

## Awards

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2018 **Travel grant for ATC'18**, Usenix ATC 2018

Boston, MA

2017 **Travel grant for Middleware'17**, Middleware 2017

Las Vegas, United States

2016 **Travel grant for ICDCS'16**, ICDCS 2016

Nara, Japan

## Projects

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### Nixpkgs/Nixos

CORE MAINTAINER OF NIXOS, A FUNCTIONAL LINUX DISTRIBUTION

<https://github.com/Nixos/nixpkgs/>

### docker

MAINTAINER OF THE ZFS GRAPH-DRIVER

<https://mobyproject.org/>

### python-mpd2

PYTHON LIBRARY FOR THE MPD NETWORK PROTOCOL

<https://github.com/Mic92/python-mpd2>

## Skills

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<b>Programming</b>	Python, Rust, C/C++, Go, Ruby, Java, Shells scripting, JavaScript, Lua
<b>Administration</b>	Chef, Ansible, Mail-/Web-server, Network: BGP/OSPF/IPv6
<b>Databases</b>	Postgresql, Mysql, Mongodb, Elasticsearch, Redis
<b>Web</b>	Ruby-On-Rails, Flask, Sinatra
<b>Languages</b>	German, English, French
<b>OS-Visualisation</b>	LXC, Docker, systemd-nspawn, FreeBSD jails
<b>Other</b>	git, test-driven development, active in the open source community

## References

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- [1] **Prof. Pramod Bhatotia** The University of Edinburgh, UK | ✉ [pramod.bhatotia@ed.ac.uk](mailto:pramod.bhatotia@ed.ac.uk)
- [2] **Prof. Baris Kasikci** University of Michigan, USA | ✉ [barisk@umich.edu](mailto:barisk@umich.edu)
- [3] **Prof. Christof Fetzer** TU Dresden, Germany | ✉ [christof.fetzer@tu-dresden.de](mailto:christof.fetzer@tu-dresden.de)
- [4] **Dr. Bimal Viswanath** University of Chicago, USA | ✉ [viswanath@cs.uchicago.edu](mailto:viswanath@cs.uchicago.edu)