Baris Can Cengiz Kasikci

Research Assistant
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Research Interests

My research is centered around building techniques, tools and environments that will ultimately help us build more reliable and secure software. I am interested in finding solutions that will allow programmers to debug their code in an easier way. In this regard, I strive to find efficient ways to detect, classify and perform root cause diagnosis of bugs. I am also interested in efficient runtime instrumentation and program analysis under various memory models.

Education

Ecole Polytechnique Fédérale de Lausanne (EPFL) — *Lausanne, Switzerland*
Ph.D. in Computer Science — Sept. 2010–Present
Advisor: Prof. George Candea

Middle East Technical University (METU) — *Ankara, Turkey*
M.Sc. in Electrical and Electronics Engineering — Sept. 2006–Jun. 2009
Thesis: Variability Modeling in Software Product Lines
Graduated with the top grade
Advisor: Prof. Semih Bilgen

B.S. in Electrical and Electronics Engineering — Sept. 2002–Jun. 2006
Project: Embedded target estimation, detection and tracking software
Graduated with High Honors
Advisor: Prof. Arzu Koc

Work Experience

Ecole Polytechnique Fédérale de Lausanne — *Lausanne, Switzerland*
Research Assistant — Sept. 2010–Present
Research on reliable systems under the supervision of Prof. George Candea

Intel — *Santa Clara, CA, USA*
Research Intern — Jul. 2015–Present
Failure root cause diagnosis and security auditing using hardware support

VMware — *Palo Alto, CA, USA*
Research and Development Intern — Jun. 2014–Sep. 2014
Developing automated debugging tools

Microsoft Research — *Redmond, WA, USA*
Research Intern — Jun. 2013–Sep. 2013
Developed a low overhead coverage measurement and fault injection tool for managed applications using C++ and C#

Siemens Corporate Technology *Istanbul, Turkey*
Senior Software Engineer Mar. 2008–May 2010
Developed an embedded gateway software between Siemens communication processors and a building automation system using C++ on top of VxWorks

Aselsan Electronic Industries *Ankara, Turkey*
Software Engineer May 2006–Mar. 2008
Developed a real time embedded control software for turret motor control and full system functional testing using C++ on top of VxWorks for Power PC architectures

Student Intern Jun. 2005–Jul. 2005
Developed an embedded control software for a night vision camera using C and PIC assembly on top of a PIC 16F877

Professional Service

Reviewer

Transactions on Software Engineering	2015
Transactions on Software Engineering and Methodology	2015

PC Member

International Symposium on Software Testing and Analysis, Artifact Evaluation Committee	2014

Shadow PC Member

EuroSys – EuroSys Conference on Computer Systems	2013, 2015

External Reviewer

CIDR – Conference on Innovative Data Systems Research	2013
DSN – Intl. Conf. on Dependable Systems and Networks	2011, 2013
EuroSys – EuroSys Conference on Computer Systems	2011, 2012
HotOS – Workshop on Hot Topics in Operating Systems	2011, 2013
USENIX Annual Technical Conference	2011
SOCC – Symposium on Cloud Computing	2012
SOSP – Symp. on Operating Systems Principles	2011. 2013
SPIN – Intl. SPIN Workshop on Model Checking of Software	2011

Teaching

Principles of Computer Systems (graduate level)	2014
Software Engineering (3^{rd} year undergraduate level)	2011, 2012, 2013
Informatics II (1^{st} year undergraduate level)	2010

Honors

VMware Doctoral Fellowship	2014–2015
EPFL Doctoral Fellowship	2010–2011
Scholarship from The Scientific and Technological Research Council of Turkey for Master studies	2006–2008
Graduated in Dean's High Honor List from the Middle East Technical University	2006
Best Team Performance Award for the Undergraduate Final Project in Middle East Technical University	2006
Scholarship from Turkish Customs association	2002–2006
Ranked at the 99.7^{th} the percentile among more than 1.8 million participants to the University Entrance Examinations of Turkey	2002

Skills

Sharp learning curve, strong sense of responsibility and teamwork

Strong background in computer science and engineering, with an emphasis on operating systems, software engineering and VLSI design

Extensive knowledge of concurrency research and concepts

Extensive experience in real time embedded systems programming

Languages: C/C++, Java, C#, Python, bash, HTML, XML, CSS, UML

Tools: Emacs, Rhapsody, Rose, Visual Studio, Netbeans, Eclipse, Tornado, Clearcase, git, subversion, gdb, SourceSafe, CVS, Doors, ClearDDTS, Quality Center, MPLAB

Operating Systems: VxWorks, Linux, Unix, Mac OS X, Windows, uCOS-II

Hardware Platforms: x86, Motorola 68HC11, Microchip PIC, Power PC 603, FPGAs

Peer-reviewed Publications

[1] Failure Sketching: A Technique for Automated Root Cause Diagnosis of In-Production Failures. Baris Kasikci, Benjamin Schubert, Cristiano Pereira, Gilles Pokam, and George Candea. *Symp. on Operating Systems Principles (SOSP)*, Monterey, CA, 2015.

[2] Failure Sketches: A Better Way to Debug. Baris Kasikci, Benjamin Schubert, Cristiano Pereira, Gilles Pokam, Madan Musuvathi, and George Candea. *Workshop on Hot Topics in Operating Systems (HotOS)*, Kartause Ittingen, Switzerland, 2015.

[3] Automated Classification of Data Races Under Both Strong and Weak Memory Models. Baris Kasikci, Cristian Zamfir, and George Candea. *ACM Transactions on Programming Languages and Systems (TOPLAS)*, 2015.

[4] Efficient Tracing of Cold Code Via Bias-Free Sampling. Baris Kasikci, Thomas Ball, George Candea, John Erickson, and Madanlal Musuvathi. *USENIX Annual Technical Conf. (USENIX ATC)*, 2014.

[5] Lockout: Efficient Testing for Deadlock Bugs. Ali Kheradmand, Baris Kasikci, and George Candea. *5th Workshop on Determinism and Correctness in Parallel Programming (WoDet)*, Salt Lake City, UT, 2014.

[6] RaceMob: Crowdsourced Data Race Detection. Baris Kasikci, Cristian Zamfir, and George Candea. *Symp. on Operating Systems Principles (SOSP)*, Farmington, PA, 2013.

[7] Automated Debugging for Arbitrarily Long Executions. Cristian Zamfir, Baris Kasikci, Johannes Kinder, Edouard Bugnion, and George Candea. *Workshop on Hot Topics in Operating Systems (HotOS)*, Santa Ana Pueblo, NM, 2013.

[8] CORD: A Collaborative Framework for Distributed Data Race Detection. Baris Kasikci, Cristian Zamfir, and George Candea. *Workshop on Hot Topics in Dependable Systems (HotDep)*, Hollywood, CA, 2012.

[9] Data Races vs. Data Race Bugs: Telling the Difference with Portend. Baris Kasikci, Cristian Zamfir, and George Candea. *Intl. Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, London, UK, 2012.

[10] Scalable Modeling of Software Product Line Variability. Baris Kasikci and Semih Bilgen. *Workshop on Scalable Modeling Techniques for Software Product Lines (SCALE)*, San Francisco, CA, 2009.

Miscellaneous

Hobbies

Athletics(track and field events), grip training, arm-wrestling, skiing

Languages

English: fluent
Turkish: fluent
French: fluent
German: beginner