

Alexey Reznichenko

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RESEARCH INTERESTS Networked and P2P systems, privacy issues in online advertising systems

EDUCATION

Doctor of Philosophy in Computer Science Pursuing
Max Planck Institute for Software Systems, Kaiserslautern, Germany
Research Topic: *Privacy-preserving online advertising*
Advisor: Paul Francis

Master of Science in Computer Science August 2009
Saarland University, Saarbrücken, Germany
Thesis: *Design and implementation of a collaborative content downloading system*
Advisor: Krishna Gummadi

Master of Science in Physics *cum laudé* September 2007
Voronezh State University, Voronezh, Russia
Majors: Radio-Physics and Information Systems

Bachelor of Science in Physics *cum laudé* June 2005
Voronezh State University, Voronezh, Russia
Majors: Radio-Physics and Information Systems

ACADEMIC EXPERIENCE

Ph.D. Candidate advised by Paul Francis June 2009 - Present
Max Planck Institute for Software Systems, Kaiserslautern, Germany

PrivAd: Practical Privacy in Online Advertising
PrivAd is a research effort to build and evaluate a practical non-tracking advertising system. The system is carefully designed to enable behaviorally targeted advertising while preserving privacy of sensitive user information. Designed several auction models for the non-tracking advertising model, analyzed auctions designs in terms of privacy risks, potential attack vectors and the impact on the targeting quality and revenue streams. Built an experimental PrivAd prototype consisting of a Firefox extensions as a front-end client responsible for profiling and serving of ads as well as a number of backend services for proxying users, generating and distributing ads, and collecting anonymous view and click reports.

Graduate student advised by Krishna Gummadi September 2007 - May 2009
Saarland University and MPI-SWS, Saarbrücken, Germany

Collaborative BitTorrent (CBT)
Designed and implemented an extension to the BitTorrent protocol that allows socially connected users (i.e., friends who are willing to share their bandwidth with each other) to team up and engage in a collaborative distributed task to speed up the process of downloading a piece of content. Complementary resources provided by friends enabled CBT clients to achieve a significant improvement over vanilla protocol in the download performance. Built and evaluated a prototype on top of the Azureus BitTorrent client.

INDUSTRIAL
EXPERIENCE

Software Engineering Intern

October 2011 - March 2012

Google, Mountain View, USA

Contributed to design and implementation of Photon – a large-scale stateful distributed system for joining multiple continuously flowing streams of data with extremely high scalability and low latency. Photon is designed to withstand infrastructure degradation and datacenter-level outages without any manual intervention, providing significantly better fault-tolerance and lower maintenance overhead compared to typical single-datacenter systems. Photon is currently deployed within Google Advertising System to join multiple data streams generating joined logs critical for key business metrics.

Software Engineering Intern

Summer 2011

Google, Zurich, Switzerland

Designed, implemented and deployed a service to provide advertisers with an additional feedback channel on effectiveness of their video ad campaigns on YouTube. At the core of this service is a ranking algorithm that extracts useful signal from the bulk of user-generated comments.

Software Engineering Intern

Summer 2010

Google, Munich, Germany

Contributed to the Scripting Layer for Android (SL4A) project whose goal is to enable users to create and execute applications written in scripting languages directly on their Android devices. Brought SL4A to a qualitatively new level by adding concurrent execution of multiple scripts and ability to distribute interpreters and scripts as stand-alone APKs, which enabled developers to distribute their application through Android Market. Additionally, enhanced UI and performance, added a number of supported APIs.

Software Developer

February 2005 - March 2007

Siemens IT Solutions and Services, Voronezh, Russia

Developed Human Resources reporting tools in SAP R/3 with ABAP/4.

PUBLICATIONS

Photon: Fault-tolerant and scalable joining of continuous data stream

M. Singh, A. Gupta, H. Jiang, S. Das, T. Qiu, V. Basker, A. Reznichenko, S. Venkataraman, D. Ryabkov, A. Ananthanarayanan

in *Proceedings of the 2013 ACM SIGMOD/PODS Conference*, 2013

Towards Statistical Queries over Distributed Private User Data

R. Chen, A. Reznichenko, P. Francis and J. Gehrke

in *Proceedings of the 9th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, 2012

Auctions in Do-Not-Track Compliant Internet Advertising

A. Reznichenko, S. Guha and P. Francis

in *Proceedings of the 18th ACM Conference on Computer and Communications Security (CCS)*, 2011

Serving Ads from localhost for Performance, Privacy, and Profit

S. Guha, A. Reznichenko, K. Tang, H. Haddadi and P. Francis

in *Proceedings of the 8th Workshop on Hot Topics in Networks (HotNets)*, 2009

Privad: Rearchitecting Online Advertising for Privacy

S. Guha, B. Cheng, A. Reznichenko, H. Haddadi, and P. Francis

Technical Report, 2009

Design and Implementation of a Collaborative Content Downloading System,
Master's Thesis, Department of Computer Science, Saarland University, July 2009

TEACHING	Teaching Assistant , Operating Systems, Saarland University	Summer 08
EXPERIENCE	Teaching Assistant , Software Engineering, Saarland University	Winter 07/08
LANGUAGES	Russian (native), English (fluent), German (working knowledge)	
REFERENCES	Available upon request	