Danica Porobić

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Research interests:
Efficient data management systems, transaction processing architectures for modern hardware

Professional experience:
- December 2016-now – Oracle America, Redwood Shores, CA, USA
  - Principal Member of Technical Staff
  - Working on Database In-Memory technologies
- September 2010-September 2016 - École Polytechnique Fédérale de Lausanne
  - Doctoral Assistant in the Data-Intensive Application and Systems Laboratory
  - Worked on scaling up transaction processing systems on non-uniform hardware
- July-October 2013 – Oracle Labs, Belmont, CA, USA
  - Research Intern
  - Worked on the RAPID project
- February 2008-July 2010 – Microsoft Development Center Serbia, Belgrade
  - Software Development Engineer in SQL Engine Team
  - Worked on the core geometry algorithms of the SQL Spatial Library
- August-October 2007 – Microsoft Corporation, Redmond, WA, USA
  - Software Development Engineer in Test Intern with Windows Serviceability division
  - Worked on improving the test coverage of the networking stack in Windows Vista
- July-October 2006 - Microsoft Development Center Serbia, Belgrade
  - Software Development Engineer Intern with the Tablet PC team
  - Worked on non-language specific tools for training of handwriting recognizer engines for tablet PC

Education:
- 2010-2016
  - École Polytechnique Fédérale de Lausanne, *PhD in Computer Science*
  - Thesis topic: High Performance Transaction Processing on Non-Uniform Hardware Topologies
  - Advisor: Prof. Anastasia Ailamaki
- 2008-2010
  - University of Novi Sad, Faculty of Sciences, *MSc in Informatics*
- 2004-2008
  - University of Novi Sad, Faculty of Sciences, *BSc in Informatics*
  - Best student of the Faculty of Sciences
  - Best student in the field of study, University of Novi Sad

Publications:

- R. Appuswamy, A. Anadiotis, D. Porobic, M. Iman, A. Ailamaki: "Analyzing the Impact of System Architecture on the Scalability of OLTP Engines for High-Contention Workloads", VLDB 2018
- R. Appuswamy, M. Karpathiotakis, D. Porobic, A. Ailamaki: "The Case For Heterogeneous HTAP", CIDR 2017
- A. Ailamaki, D. Porobic, U. Sirin: "Performance and Energy Analysis Using Transactional Workloads", TPC-TC 2016
- D. Porobic, P. Tözün, R. Appuswamy, A. Ailamaki: "More Than A Network: Distributed OLTP on Clusters of Hardware Islands", DaMon 2016
- U. Sirin, P. Tözün, D. Porobic, A. Ailamaki: "Microarchitectural Analysis of In-memory OLTP", SIGMOD 2016
- D. Porobic, I. Pandis, M. Branco, P. Tözün, A. Ailamaki: "Characterization of the Impact of Hardware Islands on OLTP", VLDB Journal, 25(5), 2016
- D. Cervini, D. Porobic, P. Tözün, A. Ailamaki: "Applying HTM to an OLTP System: No Free Lunch", DaMon 2015
- A. Ailamaki, E. Liarou, P. Tözün, D. Porobic, I. Psaroudakis: "How to Stop Under-Utilization and Love Multicores" *(tutorial)*, ICDE 2015
- D. Porobic: "Smoothing non-uniform communication latencies for OLTP" (abstract), CIDR 2015
- I. Psaroudakis, T. Kissinger, D. Porobic, T. Ilsche, E. Liarou, P. Tözün, A. Ailamaki, W. Lehner: "Dynamic Fine-Grained Scheduling for Energy-Efficient Main-Memory Queries", DaMon 2014
- A. Ailamaki, E. Liarou, P. Tözün, D. Porobic, I. Psaroudakis: "How to Stop Under-Utilization and Love Multicores" *(tutorial)*, SIGMOD 2014
- D. Porobic, E. Liarou, P. Tözün, A. Ailamaki: "ATraPos: Adaptive Transaction Processing on Hardware Islands", ICDE 2014
- D. Porobic, I. Pandis, M. Branco, P. Tozun, A. Ailamaki: "OLTP on Hardware Islands", In Proceedings VLDB, Volume 5, 2012.
- I. Pandis, P. Tozun, M. Branco, D. Karampinas, D. Porobic, R. Johnson, A. Ailamaki: "A Data-oriented Transaction Execution Engine and Supporting Tools" *(demo)*, SIGMOD 2011 **Best Demonstration Award**
- B. Uzelac, N. Matkovic, D. Porobic: "Testing Spatial Methods in SQL Server 11.0", DBTest 2011
- M. Kallay, D. Porobic: "Buffer with Arcs on a Round Earth", GiScience 2010
- D. Porobić: "Efficient distance computation between sets of planar geometric objects" (in Serbian), Telfor 2009
- B. Dresevic, B. Bjelajac, D. Porobic: "Non-Language-Specific Raw Ink Segmentation", Microsoft Defensive Publication, ip.com, 2008

Awards/Honors:
- Best Demonstration Award, ACM SIGMOD Conference 2011
- „Aleksandar Saša Popović" University award for exceptional graduation thesis in the field of Computer Science, Novi Sad 2009
- University and faculty award for excellent results during the undergraduate studies
- University and faculty award for excellent results in the first, third and fourth year of studies
- EFG Eurobank Scholarship for best university students in Serbia, 2007
- Bronze medal at International Olympiad in Informatics, Athens, Greece, 2004
- Bronze medal at Balkan Olympiad in Informatics, Plovdiv, Bulgaria, 2004
- Silver medal at Balkan Olympiad in Informatics, Iasi, Romania, 2003

Fellowships:
- 11/2011-05/2014 – Oracle Labs Fellowship
- 09/2010-08/2014 – Dositeja Fellowship from the Serbian Government for students studying abroad
- 09/2010-09/2011 – EPFL I&C School Fellowship
- 01/2005-09/2008 - Serbian Ministry of Science Fellowship
- 01/2004-12/2004 - Serbia Tomorrow Fellowship
- 10/2003-12/2003 - Serbian Ministry of Science and Environment Fellowship
- 10/2002-09/2003 - Serbian Foundation of Scientific Youth Development Fellowship

Conference presentations and invited talks:
- "More Than A Network: Distributed OLTP on Clusters of Hardware Islands" at DaMon 2016
- "How to Stop Under-Utilization and Love Multicores" invited tutorial at COMAD 2016
- "Smoothing non-uniform communication latencies for OLTP" at Dagstuhl Seminar on "Rack-Scale Computing" 2015
- "Toward Rack-Scale OLTP" at HPTS 2015
- "Toward Rack-Scale OLTP" at EcoCloud Annual Event 2015
- "Applying HTM to an OLTP System: No Free Lunch" at DaMon 2015
- "How to Stop Under-Utilization and Love Multicores" at ICDE 2015
- "OLTP for modern hardware: scalability and instruction locality" at ETH/Oracle Labs workshop 2015
- "Smoothing non-uniform communication latencies for OLTP" at CIDR 2015
- "Adaptive Transaction Processing on Hardware Islands" at University of Novi Sad, 2014
- "How to Stop Under-Utilization and Love Multicores" at SIGMOD 2014
- "Adaptive Transaction Processing on Hardware Islands" at ICDE 2014
- "HPTS on Islands" at HPTS 2013
- "OLTP on Hardware Islands" at VLDB 2012

Professional activities:
- Program committees: SIGMOD 2016 (Demo), ICDE 2017, VLDB 2017 (Demo), WomEncourage 2017, DBPL 2017, SIGMOD 2018, ICDE 2018, ACM SRC 2018, EDBT 2018
- Reviewer: SIGMOD Record, ComSIS, Distributed and Parallel Databases

Teaching experience:
- Spring 2016: Guest Lecturer, CS-322 Introduction to Database Systems
- Fall 2015: Teaching Assistant, Analyse I
- Spring 2015: Teaching Assistant and Guest Lecturer, CS-322 Introduction to Database Systems
- Fall 2014: Teaching Assistant, CS-450 Advanced Algorithms
- Spring 2014: Teaching Assistant, CS-322 Introduction to Database Systems
- Spring 2013: Teaching Assistant, CS-322 Introduction to Database Systems
- Fall 2012: Teaching Assistant, CS-522 Principles of Computer Systems
- Spring 2012: Teaching Assistant, CS-322 Introduction to Database Systems
- Spring 2011: Teaching Assistant, CS-422 Advanced Databases

Other information:

- Member of the Scientific Committee for the 1st Junior Balkan Olympiad in Informatics, Belgrade, 2007
- Leader of the Serbian team at the 14th Balkan Olympiad in Informatics, Ohrid, 2008
- Member of the Scientific Committee of Serbian Informatics Competitions, 2004-2010
- Presenter at the Festival of Science, Novi Sad, 2009
- Member of the organizing committee of Bubble Cup international student programming competition in 2008 and 2009
- Professional memberships: ACM since 2005, IEEE since 2006

Patents:
- "Buffer construction with geodetic circular arcs", M. Kallay, D. Porobic, US Patent No 8669983 (March 2014)
- "Workload-aware data placement in read-only memory of a highly distributed system", D. Porobic, S. Idicula, S. Petride, pending

Languages:
- Native: Serbian
- Fluent: English
- Basic: French

References:
- Prof. Anastasia Ailamaki
  Full Professor, École Polytechnique Fédérale de Lausanne, Switzeland
  Email: anastasia.ailamaki@epfl.ch
- Prof. Wolfgang Lehner
  Full Professor, Technische Universität Dresden, Germany
  Email: wolfgang.lehner@tu-dresden.de
- Dr. Garret Swart
  Architect, Oracle Corporation, USA
  Email: garret.swart@oracle.com