Michael Borokhovich 512-293-1978 michaelbor@gmail.com

Education

Ph.D., Communication Systems Engineering (2013).
Ben-Gurion University of the Negev, Israel.
Thesis: Software Defined Networks, Failover in OpenFlow, Optimization.

M.Sc., Communication Systems Engineering (Summa Cum Laude, 2009).
Ben-Gurion University of the Negev, Israel.
Thesis: Distributed Algorithms for Information Spreading.

B.Sc., Communication Systems Engineering (Cum Laude, 2005).
Ben-Gurion University of the Negev, Israel.
Project: Traffic Generator Implementation on EZchip Network Processor.

Skills

- C/C++, Java, Python, Bash
- Socket programming
- OpenStack, OpenDaylight, ONAP
- Virtualization
- Network processors
- Communication protocols (TCP/IP,…)
- Routing protocols (RIP, OSPF, BGP)
- SDN, OpenFlow, NFV
- Linux embedded, Kernel drivers
- Machine learning

Experience

***Senior Inventive Scientist**,* AT&T Labs-Research, USA (2015-present)

- ONAP (Open Network Automation Platform www.onap.org)
  - **Policy**. Designed and developed control loop policies for network automation. Worked on high level policy abstractions and low level implementation (BRMS Drools, XACML).
  - **Safety**. Designed and developed a framework for run-time network protection from harmful actions triggered by automation.
  - **Open-source, DevOps**. Developed a framework for automatic ONAP deployment on a cloud platform for Open-sourcing.
  - **NFV (Network Functions Virtualization).** Built demo use cases for ONAP Open-sourcing: virtual firewall and virtual load balancer. For each use case: created VNFs, heat templates, initialization scripts and ONAP control loop policies.
- Metro network SDN
  - **SDN (Software Defined Networks)**. Created a prototype of an SDN multilayer network (WDM, OTN, Ethernet). The network, controlled by an ODL SDN controller, automatically corrected path diversity violations.

***Postdoctoral Fellow**,* The University of Texas at Austin, USA (2014-2015)

- Network algorithms for graph engines
  - Designed, implemented and benchmarked communication-efficient algorithms for PageRank and subgraph counting.
  - Modified existing GraphLab platform to support the communication-efficient approach.
- Scheduling algorithms for impact sourcing
  - Created a data-driven scheduling algorithm that efficiently assigns tasks to workers.

Lecturer, Teaching Assistant, ***Lab Instructor**,* Ben-Gurion University, Israel (2007-2013)

- Computer networks (Lectures, Lab).
  - For this course, **designed and developed Virtual Computer Networks Lab based on Xen**. The Lab was successfully used by hundreds of students for 7 years.
- Information Theory and Signal Processing (Teaching Assistant).

Research Intern, Telekom Innovation Laboratories (T-Labs) Berlin, Germany (2012)
- Software Defined Networks (SDN) - "Fast failover" in OpenFlow

Software Engineer, VocalTec, Israel (2005-2007)
- Worked in the VoIP Gateway project.
- Developed in C, Linux embedded, Real time environment.
- Developed drivers on Intel IXP2350 Xscale processor.
- Developed microcode for network processor IXP2350, MEv2.

Awards

- Excellence in Teaching Award, Ben-Gurion University (2010)
- CISCO Award for Excellence in Research and Studies (2009)

Selected Publications (Citations: https://scholar.google.com/citations?user=dGV14RsAAAAJ)

M. Borokhovich, A. Chatterjee, J. Rogers, L. R. Varshney, S. Vishwanath.
Improving Impact Sourcing via Efficient Global Service Delivery.
Bloomberg Data for Good Exchange (D4GX), 2015.

E. Elenberg, K. Shanmugam, M. Borokhovich, A. Dimakis.
Beyond Triangles: A Distributed Framework for Estimating 3-profiles of Large Graphs.
ACM SIGKDD Conference on Knowledge, Discovery and Data Mining (KDD), 2015.

I. Mitliagkas, M. Borokhovich, A. Dimakis, C. Caramanis.
FrogWild! - Fast PageRank Approximations on Graph Engines.
Very Large Data Bases (VLDB), 2015.

M. Borokhovich, L. Schiff, S. Schmid.
Provable Data Plane Connectivity with Local Fast Failover: OpenFlow Graph Algorithms.
ACM SIGCOMM Workshop on Hot Topics in Software Defined Networking (HotSDN), 2014.

C. Avin, M. Borokhovich, Z. Lotker, and D. Peleg.
Distributed Computing on Core-Periphery Networks: Axiom-based Design.
International Colloquium on Automata, Languages, and Programming (ICALP), 2014.

M. Borokhovich, S. Schmid.
How (Not) to Shoot in Your Foot with Local Fast Failover.
International Conference on Principles of Distributed Systems (OPODIS), 2013.

C. Avin, M. Borokhovich, B. Haeupler, and Z. Lotker.
Self-Adjusting Grid Networks to Minimize Expected Path Length.
Colloquium on Structural Information and Communication Complexity (SIROCCO), 2013.

C. Avin, M. Borokhovich, Y. Hadad, E. Kantor, Z. Lotker, M. Parter, and D. Peleg.
Generalized Perron-Frobenius Theorem for Multiple Choice Matrices, and Applications.
ACM-SIAM Symposium on Discrete Algorithms (SODA), 2013.

Borokhovich Michael, Avin Chen, Zvi Lotker.
Tight Bounds for Algebraic Gossip on Graphs.
IEEE International Symposium on Information Theory (ISIT), 2010.

Avin Chen, Borokhovich Michael, Arik Goldfeld.
Mastering (Virtual) Networks. A Case Study of Virtualizing Internet Lab.
International Conference on Computer Supported Education (CSEDU), 2009.