

ETZ G 90
Gloriastrasse 35
8092 Zürich
Switzerland

☎ +41 44 632 7004

FAX +41 44 632 1035

✉ fontas@tik.ee.ethz.ch

www.fontas.net

Xenofontas Dimitropoulos

Education

- 8/2002–7/2006 **PhD**, *Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta.*
GPA: 3.92/4
Advisor: George Riley
Thesis title: “Measuring and Modeling Internet Routing for Realistic Simulations”
- 8/2001–7/2002 **MSc**, *Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta.*
GPA: 3.92/4
- 10/1997–6/2001 **BS**, *Physics, Aristotle University of Thessaloniki, Greece.*
GPA: 8.8/10 (highest graduation GPA)

Experience

- 11/2006–present **Senior Researcher**, *ETH Zurich, Zurich.*
Supervising a group of students conducting research on network traffic anomaly detection, privacy-preserving analysis of traffic data, and network-level characteristics of spam. Coordinating involvement in two funded projects.
- 9/2006–10/2008 **Post-doc**, *IBM Zurich Research Lab, Zurich.*
Conducted research related to the IBM Aurora flow collector and traffic profiling system (now part of IBM Tivoli).
- 8/2007–12/2007 **Service**, *Greek Army, Thessaloniki.*
Served mandatory Greek army (on work leave from IBM Zurich).
- 5/2006–8/2006 **Intern**, *IBM Zurich Research Lab, Zurich.*
Researched algorithms and data structures for finding network traffic heavy hitters from traffic flow data.
- 5/2005–5/2006 **Research Assistant**, *Georgia Institute of Technology, Atlanta.*
Introduced techniques for generating synthetic annotated graphs that model real network topologies.
- 1/2005–5/2005 **Intern**, *Cooperative Association for Internet Data Analysis, San Diego.*
Designed heuristics for inferring relationships between Autonomous Systems (ASs) of the Internet from Border Gateway Protocol (BGP) data.
- 8/2004–12/2004 **Research Assistant**, *Georgia Institute of Technology, Atlanta.*
Implemented a parallel-distributed BGP simulator.
- 5/2004–8/2004 **Intern**, *Cooperative Association for Internet Data Analysis, San Diego.*
Developed and tested methods for measuring the AS-level topology of the Internet.
- 8/2002–4/2004 **Research Assistant**, *Georgia Institute of Technology, Atlanta.*
Implemented a simulation module of BGP for the ns-2 network simulator.
- 5/2002–8/2002 **Intern**, *Conklin Corporation, Intracom SA, Atlanta.*
Designed and implemented SNMP software for managing DSLAM devices.

Awards and Honors

- 2007 European Commission **Marie Curie grant** for reintegration to Europe.
- 2006 **Best Paper Award** for publication [15] in the Springer Passive and Active Measurements (PAM) Conference.
- 2006 **Best Paper Nominee** for publication [16] in the IEEE/ACM/SCS Principles of Advanced and Distributed Simulations (PADS) Workshop and invitation for fast-track journal submission.
- 2004 **Gerondelis Foundation fellowship** for graduate studies in the US.
- 2004 **Intel Corporation fellowship** for mentoring undergraduate students of the Georgia Institute of Technology.
- 2001 **Fulbright fellowship** for graduate studies in the US.
- 2001 Honored to lead the **Graduation Oath** for the highest GPA among all graduating students.
- 2001 National Fellowships Foundation of Greece (**IKY**) **fellowship** for having one of the five highest yearly GPAs.
- 2000 **IKY fellowship** for having one of the five highest yearly GPAs.
- 1999 **IKY fellowship** for having one of the five highest yearly GPAs.

Publications

Journals

- [1] P. Mahadevan, D. Krioukov, M. Fomenkov, B. Huffaker, **X. Dimitropoulos**, Kc Claffy, and A. Vahdat. The Internet AS-level topology: Three data sources and one definitive metric. *ACM SIGCOMM Computer Communication Review (CCR)*, 36(1), 2006.
- [2] **X. Dimitropoulos** and G. Riley. Efficient large-scale BGP simulations. *Elsevier Computer Networks, Special Issue on Network Modeling and Simulation*, 50(12), 2006.
- [3] **X. Dimitropoulos**, D. Krioukov, M. Fomenkov, B. Huffaker, Y. Hyun, Kc Claffy, and G. Riley. AS relationships: Inference and validation. *ACM SIGCOMM Computer Communication Review (CCR)*, 37(1), 2007.
- [4] A. Kind, S. Denazis, **X. Dimitropoulos**, and B. Claise. Advanced network monitoring brings life to the awareness plane. *IEEE Communications Magazine*, 46(10), 2008.
- [5] **X. Dimitropoulos**, M. Ángeles Serrano, and D. Krioukov. On cycles in AS relationships. *ACM SIGCOMM Computer Communication Review (CCR)*, 38(3), 2008.
- [6] **X. Dimitropoulos**, P. Hurley, and A. Kind. Probabilistic lossy counting: An efficient algorithm for finding network traffic heavy hitters. *ACM SIGCOMM Computer Communication Review (CCR)*, 38(1), 2008.
- [7] **X. Dimitropoulos**, M. Stocklin, P. Hurley, and A. Kind. The eternal sunshine of the sketch data structure. *Elsevier Computer Networks*, 52(17), 2008.
- [8] A. Kind, M. Stoecklin, and **X. Dimitropoulos**. Histogram-based traffic anomaly detection. *IEEE Transactions on Network and Service Management (under revision)*, 2009.
- [9] **X. Dimitropoulos**, D. Krioukov, G. Riley, and A. Vahdat. Link and node annotations in modeling complex network topologies. *ACM Transactions on Modeling and Computer Simulation (to appear)*, 2009.

Conferences and Workshops

- [10] **X. Dimitropoulos** and G. Riley. Creating realistic BGP models. In *Proceedings of IEEE Conference on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS)*, 2003.

- [11] J. Kim, S. Ko, D. Nicol, **X. Dimitropoulos**, and G. Riley. A BGP attack against traffic engineering. In *Proceedings of IEEE/ACM/SCS Winter Simulation Conference (WSC)*, 2004.
 - [12] **X. Dimitropoulos** and G. Riley. Large-scale simulation models of BGP. In *Proceedings of IEEE Conference on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS)*, 2004.
 - [13] **X. Dimitropoulos**, D. Krioukov, B. Huffaker, Kc Claffy, and G. Riley. Inferring AS relationships: Dead end or lively beginning? In *Proceedings of Springer Workshop on Experimental Algorithms (WEA)*, 2005.
 - [14] **X. Dimitropoulos**, D. Krioukov, and G. Riley. Revisiting Internet AS-level topology discovery. In *Proceedings of Springer Passive and Active Measurements Conference (PAM)*, 2005.
 - [15] **X. Dimitropoulos**, D. Krioukov, G. Riley, and Kc Claffy. Revealing the Autonomous System taxonomy: The machine learning approach. In *Proceedings of Springer Passive and Active Measurements Conference (PAM)*, 2006.
 - [16] **X. Dimitropoulos** and G. Riley. Modeling autonomous-systems relationships. In *Proceedings of IEEE/ACM/SCS Principles of Advanced and Distributed Simulations (PADS)*, 2006.
 - [17] D. Dechouniotis, **X. Dimitropoulos**, A. Kind, and S. Denazis. Dependency detection using a fuzzy inference engine. In *Proceedings of IFIP/IEEE International Workshop on Distributed Systems: Operations and Management (DSOM)*, 2007.
 - [18] **X. Dimitropoulos**, P. Hurley, A. Kind, and M. Stoecklin. On the 95-percentile billing method. In *Proceedings of Springer Passive and Active Measurements Conference (PAM)*, 2009.
- Conferences and Workshops (short papers)
- [19] **X. Dimitropoulos**, D. Krioukov, G. Riley, and Kc Claffy. Classifying the types of Autonomous Systems in the Internet. In *Proceedings of ACM SIGCOMM*, 2005.
 - [20] **X. Dimitropoulos**, G. Riley, D. Krioukov, and R. Sundaram. Towards a topology generator modeling AS relationships. In *Proceedings of IEEE International Conference on Network Protocols (ICNP)*, 2005.
 - [21] **X. Dimitropoulos** and A. Kind. Simplifying the configuration of network monitoring probes. In *Proceedings of CERT FloCon*, 2008.
- Patents
- [22] **X. Dimitropoulos**, A. Kind, D. Bauer, and D. Dechouniotis. A shortest-path valley-free algorithm. (filed), 2007.
 - [23] A. Kind, **X. Dimitropoulos**, B. Jansen, and J. Massar. Topology and routing discovery through flow-based traffic information. (filed), 2008.
 - [24] **X. Dimitropoulos**, P. Hurley, A. Kind, and M. Stoecklin. Quick method to perform probabilistic lossy counting. (filed), 2008.
- Technical Reports
- [25] P. Mahadevan, D. Krioukov, M. Fomenkov, B. Huffaker, **X. Dimitropoulos**, Kc Claffy, and A. Vahdat. Lesson from three views of the Internet topology. Technical Report TR-2005-02, CAIDA, 2005.

Invited Talks

- 2007 Panel Session of IEEE Workshop on Network Measurements
- 2007 TIK Institut of ETH University
- 2006 Internet Statistics and Metrics Analysis (ISMA) Workshop on Internet Topology (WIT)
- 2005 CAIDA WIDE Workshop

Service

Program Committee Member

- 2008 1st COST TMA Workshop
- 2006 ACM SIGCOMM CoNext Student Workshop

Reviewer

- 2008 ACM SIGMETRICS Performance Evaluation Review (PER)
- 2008 IEEE/ACM Transactions on Networking (ToN)
- 2007 IEEE International Workshop on Wireless Local Networks (WLN)
- 2006 ACM SIGCOMM Computer Communication Review (CCR)
- 2006 Elsevier Microprocessors and Microsystems
- 2004–2006 IEEE Modeling, Analysis, and Simulation of Computer and Telecommunication Systems
- 2006 IEEE/ACM/SCS Principles of Advanced and Distributed Simulations
- 2006 IEEE/ACM/SCS Winter Simulation Conference

Funding

- 2007–2009 European Union Marie Curie International Reintegration Grant (€ 80,000)