

DR. ALBERTO DAINOTTI

Assistant Research Scientist, Center for Applied Internet Data Analysis (CAIDA)
San Diego Supercomputer Center, University of California San Diego

alberto@caida.org

<http://www.caida.org/~alberto/>

Professional Preparation

University of Napoli Federico II, Italy	Computer and Systems Engineering	Ph.D. (2005-2008)
University of Napoli Federico II, Italy	Computer Science and Engineering	M.Sc. (2004)

Appointments:

2013-present	Assistant Research Scientist, SDSC, UC San Diego
2012-2012	PostDoc, SDSC, UC San Diego
2010-2011	PostDoc, Computer Science & Engineering Department, UC San Diego
2008-2009	Adjunct Professor, Computer Science, University of Napoli "l'Orientale", Italy
2009-2010	PostDoc, University of Napoli Federico II, Italy
2005-2008	PhD Student, Computer and Systems Engineering, University of Napoli Federico II, Italy

Research Interests:

Computer networks. Internet measurement and Internet security, with a focus on the analysis of large-scale Internet phenomena.

Selected recent publications:

- T. Holterbach, E. Costa Molero, M. Apostolaki, A. Dainotti, S. Vissicchio, L. Vanbever, "Blink: Fast Connectivity Recovery Entirely in the Data Plane", *USENIX NSDI 2019*
- P. Sermpezis, V. Kotronis, P. Gigis, X. Dimitropoulos, D. Cicalese, A. King, A. Dainotti, "ARTEMIS: Neutralizing BGP Hijacking within a Minute", *IEEE/ACM Transactions on Networking*, *In press*
- M. Jonker, A. Pras, A. Dainotti, A. Sperotto, "A First Joint Look at DoS Attacks and BGP Blackholing in the Wild", *ACM SIGCOMM Internet Measurement Conference 2018*, *Nov 2018*
- I. Livadariu, K. Benson, A. Elmokashfi, A. Dhamdhere, A. Dainotti, "Inferring Carrier Grade NAT Deployments in the Wild", *IEEE INFOCOM 2018*, *Apr 2018*
- M. Jonker, A. King, J. Krupp, C. Rossow, A. Dainotti, A. Sperotto, "Millions of Targets Under Attack: a Macroscopic Characterization of the DoS Ecosystem", *ACM SIGCOMM Internet Measurement Conference 2017*, *Nov 2017*
- T. Holterbach, S. Vissicchio, L. Vanbever, A. Dainotti, "SWIFT: Predictive Fast Reroute", *ACM SIGCOMM 2017*, *Aug 2017*
- C. Orsini, A. King, D. Giordano, V. Giotsas, A. Dainotti, "BGPStream: a framework for live and historical BGP data analysis", *ACM SIGCOMM Internet Measurement Conference (IMC)*, *Oct 2016*
Awarded the IRTF Applied Networking Research Prize 2017
- A. Dainotti, K. Benson, A. King, B. Huffaker, E. Glatz, X. Dimitropoulos, P. Richter, A. Finamore, A. Snoeren. "Lost in Space: Improving Inference of IPv4 Address Space Utilization". *IEEE Journal on Selected Areas in Communications (J-SAC)*, 2016
- A. Dainotti, A. King, K. Claffy, F. Papale, and A. Pescapè, "Analysis of a "/>0" Stealth Scan from a Botnet", in *ACM SIGCOMM Internet Measurement Conference (IMC) 2012* and *IEEE/ACM Transactions on Networking*, *vol.23, no.2, pp.341-354, 2015*
- A. Dainotti, C. Squarcella, E. Aben, K. C. Claffy, M. Chiesa, M. Russo, A. Pescapè, "Analysis of Country-wide Internet Outages Caused by Censorship", *ACM SIGCOMM Internet Measurement Conference (IMC) 2011* and *IEEE/ACM Transactions on Networking*, *vol.22, no.6, pp.1964-1977, 2014*
Awarded the IRTF Applied Networking Research Prize 2012

Funded Research Grants:

Principal Investigator:

- US DHS contract “IODA-NP: Multi-source Realtime Detection of Macroscopic Internet Connectivity”, 2018-2020
- US NSF grant CNS-1730661 “CI-SUSTAIN: Sustainable Tools for Analysis and Research on Darknet Unsolicited Traffic (STARDUST)”, 2017-2020
- US NSF grant CNS-1705024 “SaTC: Large: Investigating the Susceptibility of the Internet Topology to Country-level Connectivity Disruption and Manipulation”, 2017-2020
- “ARTEMIS: Neutralizing BGP Hijacking within a Minute” funded by Comcast Innovation Fund, 2018-2019
- “An Observatory for Realtime Monitoring and Analysis of Internet Blackouts Caused by Censorship”, Open Tech Fund, 2018-2019
- “Native support for the BGP Monitoring Protocol in BGPStream”, funded by Cisco, 2016-2017
- US NSF grant CNS-1423659 “Detecting and Characterizing Internet Traffic Interception Based on BGP Hijacking”, 2014-2018
- “Monitoring and Visualizing Internet Outages” funded by Comcast Tech Fund, 2014
- US NSF grant CNS-1228994 “Detection and analysis of large-scale Internet infrastructure outages”. 2012-2016

Co-Principal Investigator:

- US DHS contract FA8750-18-2-0049, “ASSISTS - Advancing Scientific Study of Internet Security and Topological Stability”, 2018-2019
- US NSF grant CNS-1724853 “CIF21 DIBBs: EI: Integrated Platform for Applied Network Data Analysis (PANDA)”, 2017-2022

Awards:

- Applied Networking Research Prize 2017 by the Internet Research Task Force for BGPStream
- Applied Networking Research Prize 2012 by the Internet Research Task Force for research on Internet communications disruption and filtering

Synergistic Activities:

- Independent reviewer of project proposals for the US National Science Foundation (NSF) and the European Commission (FP7, Horizon 2020)
- Editorial board member of: *IEEE/ACM Transactions on Networking*; *ACM SIGCOMM Computer Communication Review*
- General Chair of: *ACM SIGCOMM CoNEXT 2018*
- Lead organizer of: *BGP Hackathon 2016*, *Internet Measurement and Political Science Workshop* (2014, 2016, 2017, 2018)
- Program Chair of: *ACM SIGCOMM Workshop on Big Data Analytics and Machine Learning for Data Communication Networks (Big-DAMA 2017, 2018)*; *Workshop on Traffic Monitoring and Analysis (TMA) 2014*.
- Member of Technical Program Committees of international conferences and workshops: *ACM CoNEXT*, *ACM IMC*, *PAM*, *TMA*, *IEEE WNM*, *IEEE ICNC*, *IEEE GLOBECOM*, *IEEE ICC*

Advisor of PostDocs and Phd Students:

PostDocs: Ramakrishna Padmanabhan, Shuai Hao, Chiara Orsini (*CAIDA/UCSD*). PhD students: Karyn Benson (*CAIDA/UCSD*)