



Luca Baldesi

Curriculum Vitae

Profile

I'm a Ph.D. student at the Department of Information Engineering and Computer Science (DISI) at the University of Trento, Italy. I received my Bachelor and Master degrees in Computer Engineering from the University of Florence in 2011 and 2013 respectively. I have held a position as a research fellow at the University of Trento (2013-2014). My research interests are in the area of computer networks and content distribution. Currently, my work focuses on: video streaming on community networks, centrality-based optimization and graph theory.

Education

2011–2013 **Masters of Computer Science Engineering**, *The University of Florence*, Italy, 110/110 cum laude.

Career Mention

2007–2011 **Bachelor of Computer Science Engineering**, *The University of Florence*, Italy, 107/110.

Masters Thesis

Title *Analysis of the Bluetooth protocol and robustness testing of its implementations in mobile devices and operating systems*

Supervisors Professor Tommaso Pecorella & Ph.D. Leonardo Maccari

Description This thesis investigates the security of Bluetooth devices against black box fuzzy attacks.

Experience

Vocational

2014–Present **Ph.D. student**, *University of Trento*, Trento, Italy.

Research in distributed networked system optimization: local strategies, cross-layer approaches and centrality driven distribution, supervised by Prof. Renato Lo Cigno.

Project contribution:

- netCommons: interdisciplinary project treating networks infrastructure as commons; my contribution relied in realizing a streaming platform for community networks, called PeerStreamer-ng.

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2016 **Ph.D. period abroad**, *University of California*, Irvine.

Visiting Ph.D. student for nine months working in the computer science department on random graph properties and generators, supervised by Prof. Athina Markopoulou and Prof. Carter T. Butts.

Project contribution:

- Small: Network Sampling and Construction Methods for Inference and Anonymization; I focused on a novel framework for graph data generation and anonymization leveraging global network characteristics.

2013–2014 **Research fellowship**, *University of Trento*, Trento, Italy.

Research in the fields of peer-to-peer live streaming video and Wireless Community Networks. Involved in the EIT "Smart Ubiquitous Content" and "Open Source P2P Streaming" projects.

Project contribution:

- EIT - Smart Ubiquitous Content; the project goal was to empower economic, massive content delivery in heterogeneous networks. I contributed on the Streaming and Traffic Management
- Open Source P2P Streaming; sub-project of the European FP7 Confine project; I contributed on evaluating and tailoring existing P2P distribution systems in the environment of Wireless Community Networks.

Teaching activities

2013–present **Thesis co-advising**, *University of Trento*, Trento, Italy.

- Lorenzo Ghio. Logic topology adaptation strategy comparison for P2P video distribution on wireless community networks, 2014. University of Trento, Italy
- Riccardo Francescato. Feasibility study of an audio conferencing system based on PeerStreamer, 2015. University of Trento, Italy

2014–2015 **Teaching assistant**, *University of Trento*, Trento, Italy.

- *Simulation and Performance Evaluation* course at the Department of Information Engineering and Computer Science.
- *Privacy, Trust and Security* course part of the SCoDeM master at the Department of Information Engineering and Computer Science.

Research skills

Presentations International conferences and projects meetings.

Reviews:

- IEEE ComSoc Journal on Selected Areas in Communications
- IEEE Transactions on Parallel and Distributed Systems
- Elsevier Journal of Systems and Software
- ACM SIGCOM Computer Communication Review
- IFIP Networking Conference
- ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems
- IEEE Vehicular Networking Conference
- IEEE Global Communication Conference
- IEEE International Conference on Communications: Ad-hoc and Sensor Networking Symposium

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Computer skills

- Advanced GNU/Linux system administration, C, RUBY/RAILS, PYTHON, ReST architectural style and GIT workflow.
- Intermediate JAVA, C++, MYSQL, Docker and LXC virtualisation solutions.
- Basic Arduino prototyping, OpenWRT systems.

Languages

- Italian Mother tongue
- English Advanced (B2)

Publications

- [1] Luca Baldesi, Athina Markopoulou, and Carter Butts. Spectral Graph Forge: Graph Generation Targeting Modularity. In *IEEE International Conference on Computer Communications - INFOCOM*, 2018. Accepted, to appear
- [2] Leonardo Maccari, Nicol  Facchi, Luca Baldesi, and Renato Lo Cigno. Optimized P2P streaming for wireless distributed networks. *Pervasive and Mobile Computing*, 2017
- [3] Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno. On the Use of Eigenvector Centrality for Cooperative Streaming. *IEEE Communications Letters*, 21(9):1953–1956, Sept 2017
- [4] Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno. Optimized cooperative streaming in wireless mesh networks. In *IFIP Networking Conference (IFIP Networking) and Workshops*, pages 350–358, May 2016
- [5] Luca Baldesi and Leonardo Maccari. NePA TesT: network protocol and application testing toolchain for community networks. In *12th Annual Conference on Wireless On-demand Network Systems and Services (WONS)*, pages 1–8, Jan 2016
- [6] Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno. Improving P2P streaming in Wireless Community Networks. *Computer Networks*, 93(Part 2):389 – 403, 2015
- [7] Leonardo Maccari, Luca Baldesi, Renato Lo Cigno, Jacopo Forconi, and Alessio Caiazza. Live Video Streaming for Community Networks, Experimenting with PeerStreamer on the Ninux Community. In *ACM Workshop on Do-it-yourself Networking: An Interdisciplinary Approach*, (ACM Co-located with MobySis), pages 1–6, 2015
- [8] Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno. Improving P2P streaming in community-lab through local strategies. In *10th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob)*, pages 33–39, Oct 2014
- [9] Luca Baldesi, Leonardo Maccari, and Renato Lo Cigno. Live P2P streaming in CommunityLab: Experience and insights. In *13th Annual Mediterranean Ad Hoc Networking Workshop (MED-HOC-NET)*, pages 23–30, June 2014