

Marco Chiesa | Curriculum Vitae

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I am an Assistant Professor at the KTH Royal Institute of Technology. My research interests lie in computer networking and, more specifically, in aspects of Internet protocols and architectures ranging from **security and privacy** to **network design and optimization**. I was a leading contributor to the ENDEAVOUR (H2020 EU funded) project, intended to bring Software-Defined Networking (SDN) functionality to inter-domain routing on the Internet.

Academics

- **KTH Royal Institute of Technology** **Stockholm, Sweden**
Assistant Professor *January 2018–now*
Networked Systems Lab

My responsibilities include conducting high-level international research, guaranteeing a source of funding from national and international bodies, and teaching/supervising students in their educational programs. We are currently studying inter-datacenterload-balancing traffic-delivery problems, including measurements of large-scale cloud infrastructure, routing and congestion-control mechanisms to improve performance, and applications of programmable dataplanes to the above problems. Another line of research investigates inter-domain traffic engineering, including problems related to the establishment of agreements among different entities as well as the secure communication of routing information among different networks.
- **Université catholique de Louvain** **Louvain-la-neuve, Belgium**
Postdoctoral researcher, "Endeavour" H2020 EU funded project *August 2015–December 2017*
Advisor: Prof. Marco Canini

Designed, built, and evaluated SIXPACK [w40] [c7], a privacy-preserving interdomain route-dispatch system for Internet eXchange Points (IXPs) that leverages Secure Multi-Party Computation (SMPC). Contributed to the Endeavour IXP platform [j27], a new SDN-based architecture for IXPs. Collaborated on ez-Segway [w39] [c8], a distributed network update mechanism.
- **Hebrew University of Jerusalem** **Jerusalem, Israel**
Postdoctoral researcher, I-CORE "Fibonacci" fellowship *March 2014–August 2015*
Advisor: Prof. Michael Schapira

Designed, built, and evaluated COYOTE [c10][j23], a readily deployable SDN-like traffic-engineering scheme for robust and efficient network utilization.
- **ICSI/UC Berkeley** **Berkeley, CA, US**
Visiting Ph.D. student *Aug 2013–Dec 2013*
Host: Prof. Scott Shenker

Designed, built, and evaluated novel fast-reroute algorithms in a variety of models [c11] [c12] [j25]: deterministic routing, routing with packet-duplication, routing with packet-header-rewriting, and randomized routing.
- **Hebrew University of Jerusalem** **Jerusalem, Israel**
Visiting Ph.D. student *Oct 2012–Apr 2013*
Host: Prof. Michael Schapira

Embarked upon a systematic algorithmic study of traffic engineering with OSPF/ECMP in arbitrary and datacenter [c13][j26].

- **Roma Tre University** **Rome, Italy**
Ph.D. in computer science *2011–2013*
 Advisor: Prof. Giuseppe Di Battista
 Degree Thesis: The Role of Routing Policies in the Internet: Stability, Security, and Load-Balancing
 Formally analyzed Internet routing properties related to security and stability Internet aspects [c14][c16][c17].
- **Roma Tre University** **Rome, Italy**
B.sc and M.sc. in computer science *2005–2010*
 M.sc. advisor: Prof. Giuseppe Di Battista
 M.sc. degree thesis: Inter-domain routing: relating the expressive power of router configuration languages to the complexity of stability-related decision problems
 Rating: 110/110 with honors

Publications

International conference publications.....

Conference rankings based on the CORE 2018 ranking available at <http://portal.core.edu.au/>.

- [c1] G. Katsikas, T. Barbette, **M. Chiesa**, D. Kostic, G. Maguire Jr. What you need to know about (Smart) Network Interface Cards In *Passive and Active Measurement Conference (PAM)*. 2021. Acceptance rate: 44%, (conference rank **A2** on Qualis and **B** on ERA).
- [c2] T. Barbette, C. Tang, H. Yao, D. Kostic, G. Maguire Jr., P. Papadimitratos, **M. Chiesa**. A High-Speed Load-Balancer Design with Guaranteed Per-Connection-Consistency In *USENIX Symposium on Networked Systems Design and Implementation (NSDI)*. 2020. Acceptance rate: 17%, (conference rank **A1** on Qualis and **B** on ERA).
- [c3] **M. Chiesa**, R. Sedar, G. Antichi, M. Borokhovich, A. Kamisiński, G. Nikolaidis, S. Schmid. PURR: A Primitive for Reconfigurable Fast Reroute. In *ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)*. 2019. Acceptance rate: 16%, (conference rank **A**).
- [c4] F. Németh, **M. Chiesa**, G. Rétvári. Normal Forms for Match-Action Programs. In *ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)*. 2019. Acceptance rate: 16%, (conference rank **A**).
- [c5] P. Marcos, **M. Chiesa**, L. Muller, P. Kathiravelu, C. Dietzel, M. Canini, M. Barcellos. Dynam-IX: a Dynamic Interconnection eXchange. In *ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)*. 2018. Acceptance rate: 17%, (conference rank **A**).
- [c6] P. Kathiravelu, **M. Chiesa**, P. de B. Marcos, M. Canini, L. Veiga. Moving Bits with a Fleet of Shared Virtual Routers. In *IEEE/IFIP Networking (Networking)*. 2018. Acceptance rate: 24% (conference rank **A**).
- [c7] **M. Chiesa**, D. Demmler, M. Canini, M. Schapira, T. Schneider. SIXPACK: Securing Internet eXchange Points Against Curious onlookers. In *ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)*. 2017. Acceptance rate: 18%, (conference rank **A**).
- [c8] T. D. Nguyen, **M. Chiesa**, M. Canini. Decentralized Fast Consistent Updates. In *ACM Symposium on SDN Research (SOSR)*, 2017. Acceptance rate: 23%. Leading new conference on SDN (not ranked in CORE).
- [c9] **M. Chiesa**, R. di Lallo, G. Lospoto, H. Mostafei, M. Rimondini, G. Di Battista. PrIXP: Preserving the Privacy of Routing Policies at Internet eXchange Points. In *IFIP/IEEE International Symposium on Integrated Network Management (IM)*, 2017, (conference rank **A**).

- [c10] **M. Chiesa**, G. Retvari, M. Schapira. Lying Your Way to Better Traffic Engineering. In *ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)*, 2016. Acceptance rate: 18%, (conference rank **A**).
- [c11] **M. Chiesa**, I. Nikolaevskiy, S. Mitrovic, A. Gurtov, A. Mađry, A. Panda, M. Schapira, S. Shenker. The Quest for Resilient Static Forwarding Tables. In *IEEE International Conference on Computer Communications (INFOCOM)*, 2016. Acceptance rate: 18%, (conference rank **A***).
- [c12] **M. Chiesa**, I. Nikolaevskiy, S. Mitrovic, A. Gurtov, A. Mađry, M. Schapira, S. Shenker. On the Resiliency of Randomized Routing Against Multiple Edge Failures. In *International Colloquium on Automata, Languages, and Programming (ICALP)*, 2016. Acceptance rate: 28%, (conference rank **A**).
- [c13] **M. Chiesa**, G. Kindler, M. Schapira. Traffic Engineering with Equal-Cost-Multipath: an Algorithmic Perspective. In *IEEE International Conference on Computer Communications (INFOCOM)*, 2014. Acceptance rate: 19%, (conference rank **A***).
- [c14] **M. Chiesa**, L. Cittadini, L. Vanbever, S. Vissicchio, G. Di Battista. Using Routers to Build Logic Circuits: How Powerful is BGP?. In *IEEE International Conference on Network Protocols (ICNP)*, 2013. Acceptance rate: 18%, (conference rank **A**). **Best Paper Award. Applied Network Research Prize external nomination.**
- [c15] **M. Chiesa**, G. Lospoto, M. Rimondini, G. Di Battista. Intra-Domain Pathlet Routing. In *IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2013. Acceptance rate: 30%, (not ranked in CORE, **B1** in Qualis).
- [c16] **M. Chiesa**, G. Di Battista, T. Erlebach, M. Patrignani. Computational Complexity of Traffic Hijacking under BGP and S-BGP. In *International Colloquium on Automata, Languages, and Programming (ICALP)*, 2012. Acceptance rate: 28%, (conference rank **A**).
- [c17] **M. Chiesa**, L. Cittadini, G. Di Battista, S. Vissicchio. Local Transit Policies and the Complexity of BGP Stability Testing. In *IEEE International Conference on Computer Communications (INFOCOM)*, 2011. Acceptance rate: 15%, (conference rank **A***).
- [c18] A. Dainotti, C. Squarcella, E. Aben, K. C. Claffy, **M. Chiesa**, M. Russo, A. Pescapé. Analysis of Country-wide Internet Outages Caused by Censorship. In *ACM Internet Measurement Conference (IMC)*, 2011. Acceptance rate: 19%, (conference rank **A**). **Applied Network Research Prize.**
- [c19] P. Angelini, T. Bruckdorfer, **M. Chiesa**, F. Frati, M. Kaufmann, C. Squarcella. On the Area Requirements of Euclidean Minimum Spanning Trees. In *Algorithms and Data Structures Symposium (WADS)*, 2011, (conference rank **B**).

International journal publications.....

- [j20] **M. Chiesa**, R. Sedar, G. Antichi, M. Borokhovich, A. Kamisiński, G. Nikolaidis, S. Schmid. Fast ReRoute on Programmable Switches. In *Transactions on Networking (ToN)*. 2021. **Impact factor: 3.11**
- [j21] W. Reda, K. L. Bogdanov, A. Milolidakis, H. Ghasemirahni, **M. Chiesa**, G. Q. Maguire Jr., D. Kostić. Path Persistence in the Cloud: An empirical study of the effects of Traffic Engineering in the AWS Network. In *SIGCOMM Comput. Commun. Rev. (CCR)*. 2020. **Impact factor: 2.008**
- [j22] P. Marcos, **M. Chiesa**, C. Dietzel, M. Canini, M. Barcellos. A Survey on the Current Internet Interconnection Practices. In *SIGCOMM Comput. Commun. Rev. (CCR)*. 2020. **Impact factor: 2.008**
- [j23] **M. Chiesa**, G. Retvari, M. Schapira. Oblivious Routing in IP Networks. In *Transactions on Networking (ToN)*. 2018. **Impact factor: 3.11**
- [j24] G. Antichi, I. Castro, **M. Chiesa**, E. Fernandes, R. Lapeyrade, D. Kopp, J. Han, M. Bruyere, C. Dietzel, M. Gusat, A. W. Moore, P. Owezarski, S. Uhlig, M. Canini ENDEAVOUR: A Scalable SDN Architecture for

Real-World IXPs. In *IEEE JSAC Special issue on Emerging Technologies in Software-driven Communication (JSAC)*, 2017. **Impact factor: 7.172**

- [j25] **M. Chiesa**, I. Nikolaevskiy, S. Mitrovic, A. Gurtov, A. Mađry, M. Schapira, S. Shenker. On the Resiliency of Static Forwarding Tables. In *IEEE/ACM Transactions on Networking (ToN)*, 2017. **Impact factor: 3.11**
- [j26] **M. Chiesa**, G. Kindler, M. Schapira. Traffic engineering with Equal-Cost-Multipath: An algorithmic perspective. In *IEEE/ACM Transactions on Networking (ToN)*, 2017. **Impact factor: 3.11. The IEEE Communications Society William R. Bennett Prize**
- [j27] **M. Chiesa**, C. Dietzel, G. Antichi, M. Bruyere, I. Castro, M. Gusat, T. King, A. W. Moore, T. D. Nguyen, P. Owezarski, S. Uhlig, M. Canini. Inter-domain Networking Innovation on Steroids: Empowering IXPs with SDN Capabilities. In *IEEE Communications Magazine special issue on SDN Use Cases for Service Provider Networks (Comm. Mag.)*, October, 2016. **Impact factor: 9.27**
- [j28] **M. Chiesa**, G. Di Battista, T. Erlebach, M. Patrignani. Computational Complexity of Traffic Hijacking under BGP and S-BGP. In *Theoretical Computer Science (TCS)*, 600:143-154. 2015. **Impact factor: 0.772**
- [j29] A. Dainotti, C. Squarcella, E. Aben, K. C. Claffy, **M. Chiesa**, M. Russo, A. Pescapé. Analysis of Country-wide Internet Outages Caused by Censorship. In *IEEE/ACM Transactions on Networking (ToN)*, 22(6):1964-1977. 2014. **Impact factor: 3.11**
- [j30] **M. Chiesa**, G. Lospoto, M. Rimondini, G. Di Battista. Intra-Domain Routing with Pathlets. In *Computer Communications (COMCOM)*, 46:76-86. 2014. **Impact factor: 2.613**
- [j31] P. Angelini, T. Bruckdorfer, **M. Chiesa**, F. Frati, M. Kaufmann, C. Squarcella. On the Area Requirements of Euclidean Minimum Spanning Trees. In *Computational Geometry: Theory and Applications (CG)*, 47(2):200-213. 2014. Special Issue on Selected Papers from WADS '11. No impact factor found.

Workshop papers, extended abstracts, demo, and posters.....

- [w32] A. Dethise, **M. Chiesa**, M. Canini. Poster: Prelude: Ensuring Inter-Domain Loop-Freedom in SDN-Enabled Networks. In the *Asia-Pacific Workshop on Networking (APNet)*, 2018.
- [w33] P. Marcos, **M. Chiesa**, L. Muller, P. Kathiravelu, C. Dietzel, M. Canini, M. Barcellos.. Poster: Dynam-IX: a Dynamic Interconnection eXchange. In *Applied Networking Research Workshop (ANRW)*, 2018.
- [w34] Y. Alowayed, M. Canini, P. Marcos, **M. Chiesa**, M. Barcellos. Poster: Picking a Partner: A Fair Blockchain Based Scoring Protocol for Autonomous Systems. In *Applied Networking Research Workshop (ANRW)*, 2018.
- [w35] R. Sedar, M. Borokhovich, **M. Chiesa**, G. Antichi, S. Schmid. Exploring Fast Reroute Mechanisms in P4. In *SIGCOMM Workshop on Networking for Emerging Applications and Technologies (NEAT)*. 2018. Workshop paper.
- [w36] K-T. Foerster, M. Parham, **M. Chiesa**, S. Schmid. TI-MFA: Keep Calm and Reroute Segments Fast In *IEEE Global Internet Symposium (GI)*, 2018
- [w37] A. Dethise, **M. Chiesa**, M. Canini. Poster: Privacy-Preserving Detection of Inter-Domain SDN Rules Overlaps. In (**SIGCOMM**), 2017
- [w38] C. Dietzel, G. Antichi, I. Castro, E. Fernandes, **M. Chiesa**, D. Kopp. Demo: SDN-enabled Traffic Engineering and Advanced Blackholing at IXPs. In *Symposium on SDN Research (SOSR)*, 2017
- [w39] T. D. Nguyen, **M. Chiesa**, M. Canini. Towards Decentralized Fast Consistent Updates. In *Applied Networking Research Workshop (ANRW)*, 2016. Workshop paper.
- [w40] **M. Chiesa**, D. Demmler, M. Canini, M. Schapira, T. Schneider. Poster: Towards Securing Internet eXchange Points Against Curious onlookers. In *Applied Networking Research Workshop (ANRW)*, 2016.

Selected Awards

- **IEEE Communications Society William R. Bennett Prize 2020**
For our paper "Traffic Engineering with ECMP: An Algorithmic perspective"
"Best publication of an original paper published in the IEEE/ACM Transactions on Networking or the IEEE Transactions on Network and Service Management in the previous three calendar years"
- **2 x Distinguished TPC member**
IEEE INFOCOM 2019 and IEEE INFOCOM 2020
"This distinction is awarded based upon ratings by peer TPC members, fairness in review scores, and promptness in meeting various deadlines during the review process".
- **Facebook Networking Systems Research Award 2019, runner-up**
"A High-Speed Stateless Load-Balancer with Perfect Connection-Affinity"
"The proposal and the scientific work that underpins it [the project] was rated as internationally excellent by the reviewer panel"
- **Best Paper**
IEEE ICNP 2013
- **IETF Applied Research Networking Prize 2012**
For our IMC paper "Analysis of Country-wide Internet Outages Caused by Censorship"
- **IETF Applied Research Networking Prize 2013 external nomination**
For our ICNP paper "Using Routers to Build Logic Circuits: How Powerful is BGP?"
- **Travel Grants**
INFOCOM 2011, ICNP 2013
- **National Mathematics Competitions 2005**
4th placement at the Italian Kangourou mathematics competition (Mirabilandia, Italy)
Honorable mention at the Italian championship in mathematics (Cesenatico, Italy)
7th place at the regional mathematics competition within the area of Rome (Italy). Over 100,000 students.

Professional Service

- **Program Committee**
2021: INFOCOM, PAM, APNet
2020: INFOCOM, CoNEXT, ICNP, APNet, Global Internet Symposium, SIGCOMM Posters and Demos
2019: INFOCOM, ICNP, HPSR, APNet, CCGrid, SIGCOMM Posters and Demos, CoNEXT Students Workshop
2018: INFOCOM, ICNP, SOSR, HPSR, CCGrid, LANMAN, APNet, EuroSys Doctoral Workshop, SOSR Posters and Demos
2017: ICNP, ITC, SWFAN (Infocom workshop)
- **Ph.D. Thesis Committee**
Massimo Candela, Università di Pisa, Expected defense: Spring 2021
Sebastiano Miano, Politecnico di Torino, Spring 2020
Doron Zarchy, Hebrew University of Jerusalem, Israel, Spring 2019
Habib Mostafei, Roma Tre University, Italy, Spring 2019
Németh Krisztián, Budapest University of Technology and Economics, Hungary, Spring 2018
(mid-term) Rodrigo Ruas Oliveira, Universidade Federal Do Rio Grande do Sul, Brazil, Spring 2018
- **TPC Co-chair**
2021: ACM CoNEXT, ACM SIGCOMM Posters & Demos

- **Organizing co-chair**
 - 2020: *IEEE ICNP Workshop*
 - 2019: *IEEE ICNP Publicity chair*
 - 2018: *ACM SIGCOMM Student Research Competition*
- **Award committees**
 - 2019: *ACM APNet best paper panel member*
- **Session chair invitations**
 - 2020: *INFOCOM, CoNEXT, ICNP*
 - 2019: *INFOCOM, ICNP*
 - 2018: *ICNP, SOSR, INFOCOM, LANMAN*
 - 2017: *CoNEXT, ICNP*
- **Topic Preview Invitation**
 - “New Control Plane Operations” session at SIGCOMM 2019 (declined for paternity reasons)*
 - “Routing” session at SIGCOMM 2018*
- **Journal panel**
 - JSAC on SDN scalability, 2018*
- **Invited papers**
 - LANMAN 2018 (declined)*
- **External reviewer**
 - ACM CoNEXT 2018*
 - Computer Networks 2018*
 - Transactions on Networking (ToN) 2016–current*
 - Transactions on Mobile Computing (TMC) 2017–current*
 - Transactions on Network and Service Management (TNSM) 2016–current*
 - Transactions on Signal Processing (TSP) 2020–current*
 - Parallel Processing Letters 2017–2018*
 - IEEE INFOCOM 2016–2017*
 - ACM Computer Communication Review 2017*
 - ACM SOSR 2017*
 - COMCOM 2017*
 - IEEE/IFIP Networking 2017*
 - ICALP 2016*
 - Symposium on Experimental Algorithms (SEA) 2013*
 - Graph Drawing 2012*
- **Other chair roles**
 - Publicity chair: ICNP 2019*
- **Affiliations**
 - ACM (Association for Computing Machinery) 2015–2020*
 - IEEE (Institute of Electrical and Electronics Engineers) 2011–2020*

Selected Talks

- **Next Generation Networking UK weekly seminar** **Remote**
 - Cheetah: A High-Speed Load Balancer Design with Guaranteed Per-Connection-Consistency* *Jun 2020*
- **Barefoot networks (Intel), US** **Remote**
 - Cheetah: A High-Speed Load Balancer Design with Guaranteed Per-Connection-Consistency* *Mar 2020*

- **CoNEXT** **Orlando, FL, USA**
PURR: A Primitive for Reconfigurable Fast Reroute *Dec 2019*
- **Ericsson internal talk** **Kista, Sweden**
Cheetah: A High-Speed Load Balancer Design with Guaranteed Per-Connection-Consistency *Nov 2019*
- **RIPE meeting** **Rotterdam, The Netherlands**
Internet Clouds are (also) unpredictable *Oct 2019*
- **NFS workshop: "Theory and Practice of Routing", Cornell University** **Ithaca, US**
Probabilistic and Deterministic Algorithms for Network Robustness and Traffic Engineering *Jun 2019*
- **ITN summer school, 3 hours** **Ericsson, Kista, Sweden**
SDN in the era of programmable dataplanes *May 2019*
- **Dagstuhl workshop, breakout discussion** **Dagstuhl, Germany**
Should switches merely forward packets? *Apr 2019*
- **RSLab seminar, KTH** **Kista, Sweden**
Making Internet Routing Robust and Dynamic *Mar 2019*
- **NEAT workshop, colocated with SIGCOMM 2018** **Budapest, Hungary**
Supporting Emerging Applications With Low-Latency Failover in P4 *Aug 2018*
- **SIGCOMM 2018** **Budapest, Hungary**
Preview session on "Routing" *Aug 2018*
- **P4 Workshop** **Stanford, CA, US**
P4 Fast Reroute: Keep Calm and Enjoy Programmability *Jun 2018*
- **RIPE Meeting** **Marseille, France**
Dynam-IX: a Dynamic Interconnection eXchange *May 2018*
- **CoNEXT** **Seoul, South Korea**
SIXPACK: Securing Internet eXchange Points Against Curious onlookers *Dec 2017*
- **Aalborg University** **Aalborg, Denmark**
Bootstrapping Internet Routing Innovation *Nov 2017*
- **University of Warwick** **Coventry, UK**
Routing the Future: Bootstrapping Internet Innovation *Jul 2017*
- **KTH Royal Institute of Technology** **Stockholm, Sweden**
Routing the Future: Bootstrapping Internet Innovation *Jun 2017*
- **University of Cambridge** **Cambridge, England, UK**
Routing the Future: Bootstrapping Internet Innovation *May 2017*
- **University of Edinburgh** **Edinburgh, Scotland, UK**
Routing the Future: Bootstrapping Internet Innovation *Apr 2017*
- **King Abdullah University of Science and Technology** **Thuwal, Saudi Arabia**
Securing Interdomain Routing Against Curious onlookers *Jan 2017*
- **Université catholique de Louvain** **Louvain-la-neuve, Belgium**
Routing the Future: Bootstrapping Internet Innovation *Jan 2017*
- **CoNEXT** **Irvine, CA, US**
Lying Your Way to Better Traffic Engineering *Dec 2016*
- **Fraunhofer SIT Institute** **Darmstadt, Germany**
Securing Internet Routing: an SDN Approach *Nov 2016*

- **Amsterdam Internet eXchange Point (AMS-IX)** **Amsterdam, Netherlands**
Securing Interdomain Routing Against Curious onlookers *Oct 2016*
- **Applied Networking Research Workshop (ANRW)** **Berlin, Germany**
Towards Decentralized Fast Consistent Updates *Jul 2016*
- **Applied Networking Research Workshop (ANRW)** **Berlin, Germany**
Towards Securing Interdomain Routing Against Curious onlookers *Jul 2016*
- **INFOCOM** **San Francisco, CA, US**
The Quest for Resilient Static Forwarding Tables *Apr 2016*
- **Deutscher Commercial Internet Exchange (DE-CIX)** **Frankfurt, Germany**
Securing Interdomain Routing Against Curious onlookers *Mar 2016*
- **Summer Networking at the Hebrew University of Jerusalem** **Jerusalem, Israel**
Towards Optimized and Reliable Interdomain Routing *Jul 2015*
- **Budapest University of Technology and Economics** **Budapest, Hungary**
Towards Optimized and Reliable Interdomain Routing *Jun 2015*
- **Université catholique de Louvain** **Louvain-la-neuve, Belgium**
Towards Optimized and Reliable Interdomain Routing *May 2015*
- **Roma Tre University** **Rome, Italy**
The Role of Routing Policies in the Internet: Stability, Security, and Load-Balancing *Jun 2014*
- **INFOCOM** **Toronto, Canada**
Traffic Engineering with Equal-Cost-Multipath: an Algorithmic Perspective *Apr 2014*
- **I-CORE Algo Day** **Tel Aviv, Israel**
Traffic Engineering with Equal-Cost-Multipath: an Algorithmic Perspective *Apr 2014*
- **ICNP** **Göttingen, Germany**
Using Routers to Build Logic Circuits: How Powerful is BGP? *Oct 2013*
- **ICALP** **Warwick, UK**
Computational Complexity of Traffic Hijacking under BGP and S-BGP *Jul 2012*
- **University of Leicester** **Leicester, UK**
Computational Complexity of Traffic Hijacking under BGP and S-BGP *Jul 2012*
- **INFOCOM** **Shanghai, China**
Local Transit Policies and the Complexity of BGP Stability Testing *Apr 2011*
- **AlgoDEEP** **Rome, Italy**
Local Transit Policies and the Complexity of BGP Stability Testing *Apr 2011*

Funding Grants

- **EMERGENCE: Enabling Machine Learning for Network Cybersecurity** **2020 – 2022**
Funded by "Digital Futures" within the "Research Pairs" call for proposals *1.75M SEK ≈ 175K EUR*
Role: PI. Partner: RISE
Total funding: 2M SEK
- **SE-CAID: Swedish Communications and AI research Data lab** **2019 – 2021**
Data lab and data factory as national resource 2020 *500K SEK ≈ 50K EUR*
Role: Co-PI. Partners: RISE, Lunds University, Ericsson, Stokab
Total funding: 4.5M SEK

Higher education pedagogics & certificates

- **Abilitazione Scientifica Nazionale (ASN) - Italian national scientific qualification**
Settori concorsuale: 01/F1 (Informatica) e 09/H1 (Sistemi di Elaborazione delle Informazioni) Fall 2020
 Specialization in Informatics
 The ASN qualification is a certificate awarded on the basis of scientific quality and merits that is required in Italy to obtain any position higher or equal to an Associate Professor.
- **Doctoral Supervision 3.0 hp LH207V**
Taken at KTH Royal Institute of Technology Fall 2018
- **Supervision and Assessment of Degree Project Work in 1st and 2nd Cycle 3.0 hp LH219V**
Taken at KTH Royal Institute of Technology Fall 2019
- **Teaching and Learning in Higher Education 7.5 hp LH231V**
Taken at KTH Royal Institute of Technology Spring 2020
- **Develop the Learning by Using Grading Criteria 1.5 hp LH216V**
Taken at KTH Royal Institute of Technology Spring 2020

Teaching and Supervision Experience

- **Course responsible, examiner** KTH Royal Institute of Technology
IK2217: Advanced Internetworking II
 The course contains video lectures for remote participants
 Period III, 2019 – current
- **Teacher** KTH Royal Institute of Technology
IK2220: Software Defined Networking
 Period IV, 2018 – current
- **Teacher** KTH Royal Institute of Technology
IK2215: Advanced Internetworking I
 Period I, 2018 – current
- **Ph.D. student supervision** KTH Royal Institute of Technology
 2020 – current: Giacomo Verardo (with Prof. Dejan Kostic)
 2020 – current: Massimo Girondi (with Prof. Dejan Kostic)
 2019 – current: Alexandros Milolidakis (with Prof. Dejan Kostic)
 2019 – current: Hamid Ghasemirahni (with Prof. Dejan Kostic)
 2019 – current
- **Master student supervision** KTH Royal Institute of Technology
 2021 : Felix Mauer, Zhe Wang
 2020 : Pethrus Gärdborn, Haoran Yao(ongoing), Gordon Gidofalvy(ongoing), Vinayak Tejankar, Thomas Wang
 2019: Henrik Bjorseth, Xinkai Xiong, Farhad Zareafifi
 2018: Muhammadd Raheem
- **Bachelor student supervision** KTH Royal Institute of Technology
 2021 : Emil Stal (ongoing)
- **Teacher** KTH Royal Institute of Technology
IK2217: Advanced Internetworking II
 Period III, 2018
- **Master thesis reader** Université catholique de Louvain
Reader for one master thesis
 Spring 2017
- **Teaching Assistant** Université catholique de Louvain
INGI2142 Computer networks: configuration and management
 Spring 2017
- **Student supervision** Université catholique de Louvain
Informal advisor to 2 Ph.D. students: P. Kathiravelu, R. Sedar
 Spring 2017

- **Student supervision** **Université catholique de Louvain**
Spring 2017
Supervisor to one master student: Arnaud Dethise
- **Guest lecture** **Université catholique de Louvain**
Spring 2016
INGI2347 Computer System Security
- **INGI2349 Network and Communication Seminar** **Université catholique de Louvain**
Autumn 2015
Graded students oral presentations
- **Advanced seminars on Oblivious Routing** **Hebrew University of Jerusalem**
Spring 2015
Designed and taught a seminar course for third-cycle students
- **Students supervision** **Roma Tre University**
2012–2013
Supervised two theses: Elisa Lamberti (B.Sc.), Gabriele Lospoto (M.Sc.)
Published one conference [c15] and one journal [j30] paper
- **Thesis reviewer** **Roma Tre University**
2011–2013
Read, reviewed, and graded 11 external B.sc./M.sc. thesis

Research Visits \geq 10 days

- **King Abdullah University of Science and Technology** **Thuwal, Saudi Arabia**
Jan-Feb 2017
Invited visitor, Department of Computer Science
Host: Prof. Marco Canini
Keywords: Internet architecture and security
- **Hebrew University of Jerusalem** **Jerusalem, Israel**
Mar 2016
Invited visitor, Department of Computer Science
Host: Prof. Michael Schapira
Keywords: oblivious routing
- **Budapest University of Technology and Economics** **Budapest, Hungary**
May 2015–Jun 2015
Invited visitor, Department of Computer Science
Host: Dr. Gábor Rétvári
Keywords: oblivious routing
- **UC Berkeley** **Berkeley, CA, US**
Aug 2014
Invited visitor, Department of Computer Science
Host: Prof. Scott Shenker
Keywords: data-plane connectivity
- **International Computer Science Institute and UC Berkeley** **Berkeley, CA, US**
Aug 2012–Dec 2013
Visiting Research Fellow, Department of Computer Science
Host: Prof. Scott Shenker
Keywords: deflection switching, network utilization
- **Hebrew University of Jerusalem** **Jerusalem, Israel**
Oct 2012–Apr 2013
Visiting Research Fellow, Department of computer Science
Host: Prof. Michael Schapira
Keywords: traffic-engineering, ECMP
- **University of Leicester** **Leicester, UK**
July 2012
Visiting Student, Department of Computer Science
Host: Prof. Thomas Erlebach
Keywords: routing, bgp, migrations, algorithms
- **Université catholique de Louvain** **Louvain-la-neuve, Belgium**
May 2012
Visiting Student, IP Networking Lab, Department of Computer Science
Host: Prof. Olivier Bonaventure, Dr. Stefano Vissicchio, and Dr. Laurent Vanbever
Keywords: routing, bgp, migrations, point-of-presence design

Languages

Italian: Mothertongue

English: Proficient

fluent

Swedish: Independent

intermediate; completed A1, A2, B1; ongoing: level B2

Polish: Independent

intermediate

French: Beginner

basic; level A1 certification

Academic and Industrial Impact

Marco has a proven track record in the research of Internet architectures and protocols. Marco has overall produced 10 journal and 18 conference papers (6 and 11 as a first author, respectively). As a first author, the applicant published papers at some of the highly-ranked conferences on networking (3 papers at INFOCOM, 3 papers at CoNEXT, and one best paper at ICNP) as well as highly-ranked theory conferences (2 papers at ICALP) and second-tier networking conferences. As the last author, Marco has published one paper at NSDI, the flagship conference in networked systems research. The same work has received the runner-up Facebook Networking Systems Research award. Marco has been co-awarded the Applied Networking Research Price for his contributions to the investigation of Internet censorship surveillance and he received the IEEE William R. Bennett award for the best paper in the last three academic years in the ACM/IEEE Transactions on Networking journal. Through its new excellence program (i.e., Innovation Radar), the European Union has highlighted the applicant's contribution "Next-generation SDN-IXP interdomain traffic engineering and services" to a dynamic ecosystem of incubators, entrepreneurs, funding agencies and investors that can help get EU-funded innovations faster to market. Marco has been a distinguished member of the IEEE INFOCOM program committee and a PC member for IEEE ICNP since 2017. Marco has been invited to the prestigious workshop on "Programmable Networks" organized by premier universities and industries as well as an invited speaker at the recent NSF workshop on "Theory and practice of Internet Routing". Marco has been invited twice as a topic preview speaker at ACM SIGCOMM'18-'19 on "Routing" and "New control-plane operations", the flagship conference on networking. Marco has recently received funding on the topic on Machine Learning for network cybersecurity from the Vinnova and the KTH Digital Futures programs.