Georgios Smaragdakis

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Research Interests

My research brings a data- and measurement-driven approach to studying and improving Internet security, architecture, and performance and enhancing Web privacy and security.

Appointments

Delft University of Technology (TU Delft), Delft, The Netherlands
Full Professor, Chair, and Section Head of Cybersecurity (CYS), July 2021 - present
Computer Science (CS) division, Intelligent Systems (INSY) department,
Faculty of Electrical Engineering, Mathematics, and Computer Science (EEMCS).
Research on Data-Driven Cybersecurity: Internet Security and Measurement, Web Security and Privacy Cyberthreat Intelligence, Big Data Analytics, Content Delivery.

Stanford University, Stanford, California, USA
Visiting Professor, Computer Science Department, School of Engineering October 2025 - present
Stanford Empirical Security Research Group (ESRG). Research on Internet-Scale Security and Attack Mitigation.

Max Planck Institute for Informatics (MPI-INF), Saarbrücken, Germany
Associated Researcher December 2019 - present
Research on Internet Analytics.

Berlin Institute for the Foundations of Learning and Data (BIFOLD), Berlin, Germany
Principal Investigator and Fellow February 2017 - present
Research on Big Data Analytics for the Internet, the Web, and Cybersecurity.

Technical University of Berlin (TU Berlin), Berlin, Germany
Professor and Chair, Internet Measurement and Analysis (IMA), Computer Science Feb. 2017 - June 2021
Research in the areas of Internet Measurement, Internet Security, Internet Routing, Internet Traffic Management, Content Distribution, Internet Policy, Web Analytics, Web Privacy.
Acting Chair (kommisarisch), Internet Network Architectures (INET) group August 2019 - April 2021

Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, USA
Research Affiliate, Computer Science and Artificial Intelligence Laboratory August 2017 - August 2018
Research Affiliate, MIT Internet Policy Research Initiative October 2015 - August 2018
Marie Skłodowska-Curie Fellow, Computer Science and Artificial Intelligence Laboratory August 2014 - August 2017
I worked with an interdisciplinary team on measurement-driven Internet policymaking.

Akamai Technologies, Cambridge, Massachusetts, USA
Research Collaborator, Custom Analytics group August 2014 - June 2021
I collaborated with a group of researchers, interns, and engineers of Akamai to assess the state and health of the Internet by developing novel data analytics methods to process and extract knowledge from massive CDN server logs.

Deutsche Telekom Laboratories (T-Labs), Berlin, Germany
Senior Researcher, Strategic Research group October 2008 - July 2014
(also Senior Researcher with the INET group at TU Berlin) *I helped in shaping Deustche Telekom's strategy*

in the area of Content Delivery Networks and co-founding a Deutsche Telekom spinoff (BENOCS GmbH) in the area of ISP-CDN Collaboration and Internet Analytics.

Telefónica Research, Barcelona, Spain
Research Intern, Internet Systems and Networking group January-May 2008
I worked on bulk data transfers and was one of the first team members that designed the Telefonica CDN.

Education

Ph.D. in Computer Science, **Boston University**, USA 2003-2008 (awarded Jan. 2009)
Dissertation Title: *"Overlay Network Creation and Maintenance with Selfish Users"*
Dissertation Committee: Azer Bestavros, Nikolaos Laoutaris, and John W. Byers.

Diploma in Electronic and Computer Engineering, **Technical University of Crete**, Greece October 2002
Thesis Title: *"TCP Performance over the UMTS Network".*
Advisor: Michael Paterakis

University Teaching Qualification, **Delft University of Technology**, Netherlands, October 2025

Honors and Awards

- 2025: USENIX Internet Defense Prize for [1]
- 2025: Distinguished Paper Award, USENIX Security Symposium for [1]
- 2024: Distinguished Reviewer, ACM SIGMETRICS
- 2022: ACM Distinguished Member "For Outstanding Scientific Contributions to Computing"
- 2022: IETF/IRTF Applied Networking Research Prize for [42]
- 2021: Best paper award at ACM SIGCOMM for [43]
- 2021: Communications of the ACM Research Highlights [44]
- 2021: IEEE Senior Member
- 2020: ACM Senior Member
- 2020: IETF/IRTF Applied Networking Research Prize for [59]
- 2019: Best of ACM SIGCOMM Computer Communication Review (CCR) for [63]
- 2019: IETF/IRTF Applied Networking Research Prize for [66]
- 2019: Best paper award at ACM CoNEXT for [59]
- 2018: Best paper award at ACM Internet Measurement Conference (IMC) for [65]
- 2017: Best paper award at IEEE INFOCOM for [70]
- 2016: Best paper award at ACM Internet Measurement Conference (IMC) for [73]
- 2015: Best paper award at ACM CoNEXT for [75]

- 2015: European Research Council (ERC) Starting Grant Award
- 2013: Marie Skłodowska-Curie International Outgoing Fellowship
- 2011: Best paper award at ACM Internet Measurement Conference (IMC) for [95]
- 2006 and 2007: Honorable Mention Award from the Center for Information and Systems Engineering. Boston University Science and Engineering Research Symposium.
- 2006 and 2007: 2^{nd} place Research Award. Boston University Computer Science Research Day.
- 2003: 1^{st} ERICSSON Award of Excellence in Telecommunications for Best Diploma thesis.
- 1998-2001: Annual academic excellence awards from Technical Chamber of Greece (TEE), Greek State Fellowships Foundation (IKY), Greek Ministry of Labor and Social Affairs, Paidia Foundation.

Memberships

- Association for Computing Machinery (ACM)
- ACM Special Interest Group on Data Communications (SIGCOMM)
- ACM Special Interest Group on Security, Audit and Control (SIGSAC)
- ACM Special Interest Group on Operating Systems (SIGOPS), European Chapter (EuroSys)
- Institute of Electrical and Electronics Engineers (IEEE)
- USENIX Association
- Internet Society (ISOC)
- Electronic Frontier Foundation (EFF)
- ACademic Cyber Security Society (ACCSS), The Netherlands.

Research Summary

Detection and Mitigation of Cyberattacks: We develop data-driven techniques to detect, investigate, and analyze cyber threats such as malware [1, 2, 3, 4, 5, 7, 13, 29, 17, 25, 26], phishing [18], and cybercrime [12, 32]. We also develop algorithms and techniques to detect and analyze critical Internet infrastructure failures [68, 50] and the Internet's behavior under stress [44, 54, 37] towards understanding and mitigating evolving threats in an increasingly complex Internet ecosystem. We also infer attack mitigation strategies by Internet stakeholders [69] and efficiently mitigate Tbps-level attacks [42, 64]. In the process, we uncover vulnerabilities in the global routing system [66, 55, 46] and the Network Time Protocol [19]; study the impact of major geopolitical events on Internet topology and peering [6, 22]; investigate the propagation of software updates in end-user devices such as smartphones [52]; develop new fingerprinting techniques for deployed routers [27, 28, 45] and cellular networks [31]; assess Internet of Things (IoT) security [10], 5G/6G mobile networks security [9], systems security [11], and satellite security [20]; and runtime verification for programmable networks [33, 48, 34].

Online User Privacy: We perform a large-scale study to assess the compliance of ad and tracking services with the recently implemented European Union General Data Protection Regulation (GDPR), concerning the physical location of the servers and the sensitive topics that they track [65]. We also develop classifiers to

identify sensitive Websites in the Web [51] and perform a large-scale study to assess what extent persistent cookies and trackers are present in governmental, international organizations, and COVID-19 information websites [40]. We develop secure federated learning methods for robust classification of GDPR-related sensitive and general topics [30], study new machine-learning backdoor attacks [15, 8], and investigate the shortcomings of large language models [16]. We also propose a technical solution to realize the right to be forgotten in the Cloud [14, 23]. We also study how Web users circumvent censorship in times of crisis [21]. In a parallel effort, we investigate privacy leakages in Internet of Things (IoT) [39, 53] and IPv6 [41].

Internet Sustainability: We perform a data-driven analysis and system design towards a more sustainable Internet in light of the ever-increasing traffic demand and competitiveness in the Internet ecosystem. We also develop and evaluate algorithms for incremental and sustainable upgrades of ISP networks [62, 70] and datacenters [49], and innovative utilization of in-network storage [72], as well as a multi-discipline analysis of the forces that shape Internet content delivery [43, 47, 71] and the Network Neutrality debate [58]. (see also: http://www.smaragdakis.net/research/ResolutioNet).

Internet and Content Delivery Analytics: We develop novel and scalable techniques to assess the state [73] and health of the Internet and to improve content delivery in a rapidly changing Internet [81, 78, 74]. We push the envelope in Internet measurement by relying on and analyzing massive datasets collected at both public and private vantage points [36, 79, 82, 83, 84, 81, 56, 67] and introduce new techniques to map peering interconnections to the level of a single building [75], and mapping sea cables to IPs [24]. We also exploit the distributed platform of a large content delivery network, composed of thousands of servers around the globe, to assess the performance characteristics of the Internet's core [76]. We investigate the cost-performance tradeoffs the different interconnection service offerings that are available to networks in today's Internet in one and the same colocation facility would go a long way towards putting this debate on scientifically solid foundations [74, 77]. In the process, we designed a fully decentralized, open-source analytics system for network traffic data that relies on smart partitioning storage schemes to support fast join algorithms and efficient execution of filtering queries [80] and we develop techniques for geo-distributed analytics [38]. We report on the IPv4 active address space evolution during the last eight years and we provide new insights on the activity patterns at different time granularities for individual IPs that have the potential to have significant implications on Internet governance, measurement practice, network management and security, and content delivery alike [73]. We also summarize our experience and best practices for reproducibility [63]. (see also: http://www.smaragdakis.net/research/CDN-H)

ISP-CDN Collaboration: We develop and operate systems [59, 35] to enable the collaboration between ISPs and CDNs. We design and evaluate a service provided by an ISP, called *PaDIS*, to improve end-users experience based on the network information and end-user location available to an ISP, as well as server and path diversity information gathered by an ISP [99, 98]. We also introduce *Content-aware Traffic Engineering* (CaTE) which dynamically adapts server selection for CDNized content by utilizing server and path diversity and without changing routing [94, 93]. Moreover, we show how to enable CDN and ISP collaboration, with our *NetPaaS* prototype, in light of recent CDN-ISP alliances and advances in network function virtualization. Our results show that CDN-ISP Collaboration leads to a win-win situation for both parties and improves end-user experience [78, 91, 88, 92] and has the potential to reduce energy consumption [101]. (see also: http://www.smaragdakis.net/research/Collaboration)

Content Cartography and DNS: We propose a lightweight and fully automated approach to discover hosting infrastructures based only on DNS measurements and BGP routing table snapshots [95]. Our classification enables us to derive content-centric AS rankings that complement existing AS rankings and sheds light on recent observations about shifts in interdomain traffic and the AS topology. We also show that recent DNS extensions unveil operational practices of their adopters and we develop an automated system to perform network and caching analytics based on collected measurements [87]. In a parallel effort we undertake a large scale study to assess DNS performance in the wild and we highlight the implications of DNS deployment

to end-users, ISPs and applications [100]. We also show that a significant part of Internet traffic is back-office traffic to support the ever-increasing complexity of Web applications [83] and that traceroutes can be a proxy for network traffic estimation [84]. (see also: http://www.smaragdakis.net/research/Cartography)

IXP Data Analysis: Large Internet Exchange Points (IXPs) are responsible for exchanging tens of Petabytes of data daily but unfortunately have received very little attention from the research community. We have established a pioneer research project to assess the importance of IXPs for today's Internet ecosystem [90, 81]. Our measurement results show that large IXPs are unique vantage points to get an excellent visibility of the global Internet, observe trends in content delivery [86] and application mix [79]. We also shed light on the usage and operation of route servers at IXPs [82]. (see also: http://www.smaragdakis.net/research/IXP)

Bulk Transfers on the Internet: We design and evaluate scheduling algorithms, some assisted by network-attached storage, to transfer delay tolerant bulk data over the Internet with the most cost effective way [89, 103]. Moreover, we investigate the effect of in-node storage on end-to-end delay [96]. We also investigate the performance trade-offs between sending data to a central location for processing and in-situ data processing [57, 60, 61]. In an earlier study we evaluated the robustness of memory-reduced routers in the presence of aggressive high speed transport protocols for bulk data transfers [115]. (see also: http://hermes.tid.es)

Selfish Neighbor Selection: We re-examine the problem of overlay network creation, taking into consideration the existence of selfish overlay nodes. We develop a general game-theoretic framework that provides a unified approach to modeling neighbor selection procedures on behalf of selfish nodes [97, 108]. To capitalize on the substantial performance improvement of best response wirings for overlay nodes, we design, deploy and evaluate, EGOIST, a selfish neighbor selection inspired prototype [105]. We also show the benefits selfish neighbor selection may offers to applications, e.g. swarming applications [102, 106]. (see also: http://www.smaragdakis.net/research/SNS).

Distributed Facility Location: We design and evaluate distributed algorithms for scalable and efficient service deployment and migration offered by network, application and cloud providers [85, 109]. This project was a collaboration with Telefonica Research and University of Athens. (2006-2013, see also: http://www.smaragdakis.net/research/DFL).

Distributed Selfish Caching: We studied resource allocation and sharing issues where the exposed resource is the storage of each (selfish) node, and the nodes cooperate using on-line caching algorithms. We identified the causes and implications of mistreatment in distributed caching groups [110, 112], and we designed a novel framework to mitigating mistreatment in such groups [111, 113].
(see also: http://www.smaragdakis.net/research/DSC).

A Stable Election Protocol for clustered heterogeneous wireless sensor networks: We designed and evaluated distributed leader election protocols to prolong the lifetime of heterogeneous wireless networks [116]. (see also: http://www.smaragdakis.net/research/SEP)

A Large Deviations approach to Statistical Traffic Anomaly Detection: We developed a Large Deviations framework to rigorously identify, in real-time, Network Anomalies by assessing deviations of empirical measures in computer networks [104, 114].

List of Publications

Bibliometrics: 7,420 citations, h-index: 42, i10-index: 77
Online copies of publications: https://gsmaragd.github.io/publications.html

[1] Cristian Munteanu, Georgios Smaragdakis, Anja Feldmann, and Tobias Fiebig. Catch-22: Uncovering Compromised Hosts using SSH Public Keys. In *USENIX Security Symposium*, Seattle, WA, August 2025. 🏆🏆 **[Distinguished Paper Award and USENIX Internet Defense Prize]**.

[2] Szu-Chun Huang, Harm Griffioen, Max van der Horst, Georgios Smaragdakis, Michel van Eeten, and Yury Zhauniarovich. Trust but Verify: An Assessment of Vulnerability Tagging Services. In *USENIX Security Symposium*, Seattle, WA, August 2025.

[3] Yuqian Song, Georgios Smaragdakis, and Harm Griffioen. Decoy Databases: Analyzing Attacks on Public Facing Databases. In *ACM Internet Measurement Conference (IMC) 2025*, Madison, WI, October 2025.

[4] Dario Ferrero, Enrico Bassetti, Harm Griffioen, and Georgios Smaragdakis. Have you SYN what I see? Analyzing TCP SYN Payloads in the Wild. In *ACM Internet Measurement Conference (IMC) 2025*, Madison, WI, October 2025.

[5] Cristian Munteanu, Yogesh Bhargav Suriyanarayanan, Georgios Smaragdakis, Anja Feldmann, and Tobias Fiebig. Attacks Come to Those Who Wait: Long-Term Observations in an SSH Honeynet. In *ACM Internet Measurement Conference (IMC) 2025*, Madison, WI, October 2025.

[6] Antonis Chatzivasiliou, Georgios Smaragdakis, Kevin Vermeulen, Loqman Salamatian, Amreesh Phokeer, and Xenofontas Dimitropoulos. When Routes Speak Politics: Measuring the Impact of Geopolitical Tensions on the Internet. In *Policy-Relevant Internet Measurement Workshop, co-located with IMC (IMC PRIME) 2025*, October 2025.

[7] Dario Ferrero, Georgios Smaragdakis, and Harm Griffioen. Revealing Informed Scanners by Colocating Reactive and Passive Telescopes. In *International Symposium on Research in Attacks, Intrusions and Defenses (RAID) 2025*, Gold Coast, Australia, October 2025.

[8] Stefano Cecconello, Matteo Cardaioli, Luca Pasa, Stjepan Picek, and Georgios Smaragdakis. Your PIN is Mine: Uncovering Users' PINs at Point of Sale Machines. *IEEE Transactions on Dependable and Secure Computing*, 2025.

[9] Felix Klement, Alessandro Brighente, Anup Kiran Bhattacharjee, Stefano Cecconello, Fernando Kuipers, Georgios Smaragdakis, Mauro Conti, and Stefan Katzenbeisser. Endless Subscriptions: Open RAN is Open to RIC E2 Subscription Denial of Service Attacks. In *IEEE European Symposium on Security and Privacy (EuroS&P) 2025*, Venice, Italy, July 2025.

[10] Martin Mladenov, Laszlo Erdodi, and Georgios Smaragdakis. All that Glitters is not Gold: Uncovering Exposed Industrial Control Systems and Honeypots in the Wild. In *IEEE European Symposium on Security and Privacy (EuroS&P) 2025*, Venice, Italy, July 2025.

[11] Jesús María Gómez Moreno, Vissarion Moutafis, Antreas Dionysiou, Fernando Kuipers, Georgios Smaragdakis, Bart Coppens, and Alexios Voulimeneas. Clair Obscur: The Light and Shadow of System Call Interposition – From Pitfalls to Solutions with K23. In *ACM/IFIP International Middleware Conference*, Nashville, TN, December 2025.

[12] Kris Oosthoek, Kelvin Lubbertsen, and Georgios Smaragdakis. Bitcoin Battle: Burning Bitcoin for Geopolitical Fun and Profit. In *IEEE International Conference on Blockchain and Cryptocurrency (ICBC) 2025*, Pisa, Italy, June 2025.

[13] Theodoros Apostolopoulos, Vasilios Koutsokostas, Nikolaos Totosis, Constantinos Patsakis, and Georgios Smaragdakis. Coding Malware in Fancy Programming Languages for Fun and Profit. In *ACM Conference on Data and Application Security and Privacy (CODASPY) 2025*, Pittsburg, PA, June 2025.

[14] Marwan Adnan Darwish, Evangelia Anna Markatou, and Georgios Smaragdakis. Provable Co-Owned Data Deletion with Zero-Residuals and Verifiability in Multi-Cloud Environment. In *ACM European Workshop on Systems Security (EuroSec) 2025*, Rotterdam, The Netherlands, March 2025.

[15] Dazhuang Liu, Yanqi Qiao, Rui Wang, Kaitai Liang, and Georgios Smaragdakis. LADDER: Multi-Objective Backdoor Attack via Evolutionary Algorithm. In *Network and Distributed System Security (NDSS) Symposium 2025*, San Diego, CA, February 2025.

[16] Marie-Therese Sekwenz, Rita Gsenger, Volker Stocker, Esther Görnemann, Dinara Talypova, Simon Parkin, Lea Greminger, and Georgios Smaragdakis. Can't LLMs do that? Supporting Third-Party Audits under the DSA: Exploring Large Language Models for Systemic Risk Evaluation of the Digital Services Act in an Interdisciplinary Setting. In *ACM CHIWORK 2025*, Amsterdam, The Netherlands, June 2025. 🏆 **[Best Paper Award]**.

[17] Harm Griffioen, Georgios Koursiounis, Georgios Smaragdakis, and Christian Doerr. Have you SYN me? Characterizing Ten Years of Internet Scanning. In *ACM Internet Measurement Conference (IMC) 2024*, Madrid, Spain, November 2024.

[18] Giovane C. M. Moura, Thomas Daniels, Maarten Bosteels, Sebastian Castro, Moritz Mueller, Thymen Wabeke, Thijs van den Hout, Maciej Korczynski, and Georgios Smaragdakis. Characterizing and Mitigating Phishing Attacks at ccTLD Scale. In *ACM Conference on Computer and Communications Security (CCS) 2024*, Salt Lake City, UT, October 2024.

[19] Giovane C. M. Moura, Marco Davids, Caspar Schutijser, Cristian Hesselman, John Heidemann, and Georgios Smaragdakis. Deep Dive into NTP Pool's Popularity and Mapping. In *ACM SIGMETRICS 2024*, Venice, Italy, June 2024.

[20] Nikita Yadav, Franziska Vollmer, Ahmad-Reza Sadeghi, Georgios Smaragdakis, and Alexios Voulimeneas. Orbital Shield: Rethinking Satellite Security in the Commercial Off-the-Shelf Era. In *IEEE Security for Space Systems (3S) 2024*, Noordwijk, Netherlands, May 2024.

[21] Jose Miguel Moreno, Sergio Pastrana, Jens Helge Reelfs, Pellayo Vallina, Savvas Zannettou, Andriy Panchenko, Georgios Smaragdakis, Oliver Hohlfeld, Narseo Vallina-Rodriguez, and Juan Tapiador. Reviewing War: Unconventional User Reviews as a Side Channel to Circumvent Information Controls. In *AAAI International Conference on Web and Social Media (ICWSM) 2024*, Buffalo, NY, USA, June 2024.

[22] Antonios Chatzivasileiou, Alexandros Kornilakis, Katerina Lionta, Georgios Nomikos, Xenofontas Dimitropoulos, and Georgios Smaragdakis. How Russia's Invasion of Ukraine Impacted the Internet Peering of the Conflicted Countries. In *Network Traffic Measurement and Analysis (TMA) Conference*, Dresden, Germany, May 2024.

[23] Marwan Adnan Darwish and Georgios Smaragdakis. Disjunctive Multi-Level Digital Forgetting Scheme. In *ACM/SIGAPP Symposium On Applied Computing (SAC) 2024*, Avila, Spain, April 2024.

[24] Ioana Livadariu, Ahmed Elmokashfi, and Georgios Smaragdakis. Tracking Submarine Cables in the Wild. *Computer Networks*, 242:110234, April 2024.

[25] Daniel Wagner, Sahil Ashish Ranadive, Harm Griffioen, Michalis Kallitsis, Alberto Dainotti, Georgios Smaragdakis, and Anja Feldmann. How to Operate a Meta-Telescope in your Spare Time. In *Proceedings of ACM Internet Measurement Conference (IMC) 2023*, Montreal, Canada, October 2023.

[26] Cristian Munteanu, Said Jawad Saidi, Oliver Gasser, Georgios Smaragdakis, and Anja Feldmann. Fifteen Months in the Life of a Honeyfarm. In *Proceedings of ACM Internet Measurement Conference (IMC) 2023*, Montreal, Canada, October 2023.

[27] Taha Albakour, Oliver Gasser, Robert Beverly, and Georgios Smaragdakis. Illuminating Router Vendor Diversity Within Providers and Along Network Paths. In *Proceedings of ACM Internet Measurement Conference (IMC) 2023*, Montreal, Canada, October 2023.

[28] Taha Albakour, Oliver Gasser, and Georgios Smaragdakis. Pushing Alias Resolution to the Limit. In *Proceedings of ACM Internet Measurement Conference (IMC) 2023*, Montreal, Canada, October 2023.

[29] Kris Oosthoek, Jack Cable, and Georgios Smaragdakis. A Tale of Two Markets: Investigating the Ransomware Payments Economy. *Communications of the ACM*, 66(8):74–83, August 2023.

[30] Tianyue Chu, Alvaro Garcia-Recuero, Costas Iordanou, Georgios Smaragdakis, and Nikolaos Laoutaris. Securing Federated Sensitive Topic Classification against Poisoning Attacks. In *Network and Distributed System Security (NDSS) Symposium 2023*, San Diego, CA, February 2023.

[31] Anup Kiran Bhattacharjee, Stefano Cecconello, Fernando Kuipers, and Georgios Smaragdakis. Fingerprinting of Cellular Infrastructure based on Broadcast Information. In *Proceedings of European Symposium on Research in Computer Security (ESORICS) 2023*, The Hague, Netherlands, September 2023.

[32] Kris Oosthoek, Mark van Staalduinen, and Georgios Smaragdakis. Quantifying Dark Web Shops' Illicit Revenue. *IEEE Access*, 11:2169–3536, January 2023.

[33] Apoorv Shukla, Kevin Hudemann, Zsolt Vági, Lily Hügerich, Georgios Smaragdakis, Artur Hecker, Stefan Schmid, and Anja Feldmann. Runtime Verification for Programmable Switches. *IEEE/ACM Transactions on Networking*, 31(4):1822–1837, August 2023.

[34] Habib Mostafaei and Georgios Smaragdakis. Per Priority Data Rate Measurement in Data Plane. In *Proceedings of European P4 Workshop (EuroP4) 2023*, Paris, France, December 2023.

[35] Cristian Munteanu, Oliver Gasser, Ingmar Poese, Georgios Smaragdakis, and Anja Feldmann. Enabling Multi-hop ISP-Hypergiant Collaboration. In *Proceedings of ACM/IRTF Applied Networking Research Workshop (ANRW)*, San Francisco, USA, July 2023.

[36] Selim Ozcan, Ioana Livadariu, Georgios Smaragdakis, and Carsten Griwodz. Longitudinal Analysis of Inter-City Network Delays. In *Network Traffic Measurement and Analysis Conference (TMA) 2023*, Napoli, Italy, June 2023.

[37] Volker Stocker, William Lehr, and Georgios Smaragdakis. COVID-19 and the Internet: Lessons Learned. *Beyond the Pandemic?: Exploring the Impact of COVID-19 on Telecommunications and the Internet*, pages 17–69, 2023.

[38] Habib Mostafaei, Georgios Smaragdakis, Thomas Zinner, and Anja Feldmann. Delay-Resistant Geo-Distributed Analytics. *IEEE Transactions on Network and Service Management*, 19(4):4734–4749, 2022.

[39] Said Jawad Saidi, Srdjan Matic, Oliver Gasser, Georgios Smaragdakis, and Anja Feldmann. Deep Dive into the IoT Backend Ecosystem. In *Proceedings of ACM Internet Measurement Conference (IMC) 2022*, Nice, France, October 2022.

[40] Matthias Götze, Srdjan Matic, Costas Iordanou, Georgios Smaragdakis, and Nikolaos Laoutaris. Measuring Web Cookies in Governmental Websites. In *Proceedings of ACM Web Science Conference (WebSci) 2022*, Barcelona, Spain, June 2022.

[41] Said Jawad Saidi, Oliver Gasser, and Georgios Smaragdakis. One Bad Apple Can Spoil Your IPv6 Privacy. *ACM SIGCOMM Computer Communication Review*, 52(2), April 2022.

[42] Daniel Wagner, Daniel Kopp, Matthias Wichtlhuber, Christoph Dietzel, Oliver Hohlfeld, Georgios Smaragdakis, and Anja Feldmann. United We Stand: Collaborative Detection and Mitigation of Amplification DDoS Attacks at Scale. In *Proceedings of ACM Conference on Computer and Communications Security (CCS) 2021*, Virtual Event, November 2021. 🏆 **[IETF/IRTF Applied Networking Research Prize 2022]**.

[43] Petros Gigis, Matt Calder, Lefteris Manassakis, George Nomikos, Vasileios Kotronis, Xenofontas Dimitropoulos, Ethan Katz-Bassett, and Georgios Smaragdakis. Seven Years in the Life of Hypergiants' Off-Nets. In *Proceedings of ACM SIGCOMM 2021*, Virtual Event, August 2021. 🏆 **[Best Paper Award]**.

[44] Anja Feldmann, Oliver Gasser, Franziska Lichtblau, Enric Pujol, Ingmar Poese, Christoph Dietzel, Daniel Wagner, Matthias Wichtlhuber, Juan Tapiador, Narseo Vallina-Rodriguez, Oliver Hohlfeld, and Georgios Smaragdakis. A Year in Lockdown: How the Waves of COVID-19 Impact Internet Traffic. *Communications of the ACM*, 64:101–108, July 2021. **[CACM Research Highlights]**.

[45] Taha Albakour, Oliver Gasser, Robert Beverly, and Georgios Smaragdakis. Third Time's Not a Charm: Exploiting SNMPv3 for Router Fingerprinting. In *Proceedings of ACM Internet Measurement Conference (IMC) 2021*, Virtual Event, November 2021.

[46] Thomas Krenc, Robert Beverly, and Georgios Smaragdakis. AS-Level BGP Community Usage Classification. In *Proceedings of ACM Internet Measurement Conference (IMC) 2021*, Virtual Event, November 2021.

[47] Thomas Koch, Weifan Jiang, Tao Luo, Petros Gigis, Yunfan Zhang, Kevin Vermeulen, Emile Aben, Matt Calder, Ethan Katz-Bassett, Lefteris Manassakis, Georgios Smaragdakis, and Narseo Vallina-Rodriguez. Towards an Internet Traffic Map: Connecting the dots between popular services and users. In *Proceedings of ACM HotNets 2021*, Virtual Event, November 2021.

[48] Apoorv Shukla, Kevin Hudemann, Zsolt Vági, Lily Hügerich, Georgios Smaragdakis, Artur Hecker, Stefan Schmid, and Anja Feldmann. Fix with P6: Verifying Programmable Switches at Runtime. In *Proceedings of IEEE INFOCOM 2021*, Virtual Event, May 2021.

[49] Lily Hügerich, Apoorv Shukla, and Georgios Smaragdakis. No-hop: In-network Distributed Hash Tables. In *Proceedings of ACM/IEEE Symposium on Architectures for Networking and Communication Systems (ANCS) 2021*, Virtual Event, December 2021.

[50] Leonard Becker, Oliver Hohlfeld, and Georgios Smaragdakis. Large Scale Outage Visibility on the Control Plane". In *Proceedings of ACM CoNEXT 2021 Student Workshop*, Virtual Event, December 2021.

[51] Srdjan Matic, Costas Iordanou, Georgios Smaragdakis, and Nikolaos Laoutaris. Identifying Sensitive URLs at Web-Scale. In *Proceedings of ACM Internet Measurement Conference (IMC) 2020*, Virtual Event, October 2020.

[52] John P. Rula, Philipp Richter, Georgios Smaragdakis, and Arthur Berger. Who's left behind? Measuring Adoption of Application Updates at Scale. In *Proceedings of ACM Internet Measurement Conference (IMC) 2020*, Virtual Event, October 2020.

[53] Said Jawad Saidi, Anna Maria Mandalari, Roman Kolcun, Hamed Haddadi, Daniel J. Dubois, David Choffnes, Georgios Smaragdakis, and Anja Feldmann. A Haystack Full of Needles: Scalable Detection of IoT Devices in the Wild. In *Proceedings of ACM Internet Measurement Conference (IMC) 2020*, Virtual Event, October 2020.

[54] Anja Feldmann, Oliver Gasser, Franziska Lichtblau, Enric Pujol, Ingmar Poese, Christoph Dietzel, Daniel Wagner, Matthias Wichtlhuber, Juan Tapiador, Narseo Vallina-Rodriguez, Oliver Hohlfeld, and Georgios Smaragdakis. The Lockdown Effect: Implications of the COVID-19 Pandemic on Internet Traffic. In *Proceedings of ACM Internet Measurement Conference (IMC) 2020*, Virtual Event, October 2020.

[55] Thomas Krenc, Robert Beverly, and Georgios Smaragdakis. Keep your Communities Clean: Exploring the Routing Message Impact of BGP Communities. In *Proceedings of ACM CoNEXT 2020*, Virtual Event, December 2020.

[56] Said Jawad Saidi, Aniss Maghsoudlou, Damien Foucard, Georgios Smaragdakis, Ingmar Poese, and Anja Feldmann. Exploring Network-Wide Flow Data with Flowyager. *IEEE Transactions on Network and Service Management (Special issue on Data Analytics and Machine Learning for Network and Service Management)*, 17(4):1988–2006, 2020.

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List of Patents

Eight patents awarded; six transferred to Deutsche Telekom AG and one to Telefónica SA in chronological order; external link:

1. "Distributed and Timely Network Flow Summarization at Scale", A. Feldmann, S. Saidi, G. Smaragdakis, and D. Foucard, (WO2019233567, US506520937, US20210211364A1)
2. *"Method and System for Controlling Data Communication within a Network", I. Poese, B. Frank, G. Smaragdakis, and A. Feldmann, (EP2385656, WO2011138033, CN102934396, US2013159509).
3. *"System and Method of Processing DNS Request and DNS Reply", I. Poese, B. Frank, G. Smaragdakis, and A. Feldmann, (EP2426894)

4. *"Collaboration Between an Internet Service Provider (ISP) and a Content Distribution System as well as Among Plural ISP", I. Poese, B. Frank, G. Smaragdakis, A. Feldmann, and S. Uhlig, (EP2495940, US2012226734)

5. *"Network Traffic Engineering", B. Frank, G. Smaragdakis, I. Poese, A. Feldmann, and S. Uhlig, (EP2512105, US2012314575)

6. "System for assigning an energy consumer to an energy provider", S. Schmid, A. Feldmann, and G. Smaragdakis, (EP2775446)

7. "System for Assigning a Goods Consumer to a Goods Provider", S. Schmid, A. Feldmann, and G. Smaragdakis, (EP2787471, WO2014161895, US2016034849)

8. "A Method for Transferring TByte Sized Delay Tolerant Bulk Data Using Unutilized but Already Paid for Capacity of Commercial Internet Service Providers", N. Laoutaris, P. P. Rodriguez, G. Smaragdakis, and R. Sundaram, (EP2315414, UY32962, AR078739).

*** Patents 2, 3, 4, and 5 used for the foundation of a Deutsche Telekom spin-off (BENOCS GmbH)**, for which I had an executive role from the initial idea to incubation to launching.

Research Funding

– *European Commission*: "VALIDATE: VALIDATing SEcurity Safeguards in Binaries Compiled with Memory-Safe Languages Pre-Execution" (EU Horizon Europe grant agreement 101206668). Fellow: Antreas Dionysiou; Role: Host Principal Investigator. Budget: €217,076; Duration: 2025-2027 (24 months).

– *European Commission*: "SafeHorizon: Innovations in Detecting and Disrupting Crime-as-a-Service Operations" (EU Horizon Europe grant agreement 101168562). Role: Principal Investigator. Budget: €3,998,925; TU Delft Budget: €396,250. Duration: 2024-2027 (36 months).

– *European Commission*: "RECITALS: An open-source platform for Resilient sECure digITAL identitieS" (EU Horizon Europe grant agreement 101168490). Role: Principal Investigator. Budget: €3,935,331; TU Delft Budget: €453,750. Duration: 2024-2027 (36 months).

– *European Space Agency (ESA)*: "Security Assessment of Space Avionics". Budget: €100,000. Role: Principal Investigator. Duration: 2025-2026 (12 months).

– *Dutch National Growth Fund (Nationaal Groeifonds)*: "Future Network Services". Budget: €315,000,000. Budget for my group: €550,000. Role: Principal Investigator; I am leading the activities related to 6G Security and Network Measurement. Duration: 2024-2027 (first phase).

– *European Commission*: "SEPTON: SEcurity Protection TOols for Networked medical devices" (EU Horizon Europe grant agreement 101094901). Role: Co-Principal Investigator. Budget: €4,897,778; TU Delft Budget: €267,000. Duration: 2023-2025 (36 months).

– *European Commission*: "MLSysOps: Machine Learning for Autonomic System Operation in the Heterogeneous Edge-Cloud Continuum" (EU Horizon Europe grant agreement 101092912). Role: Principal Investigator. Budget: €5,711,250; TU Delft Budget: €475,625. Duration: 2023-2025 (36 months).

– *European Commission*: "TANGO: Digital Technologies ActiNg as a Gatekeeper to information and data flOws" (EU Horizon Europe grant agreement 101070052). Role: Co-Principal Investigator. Budget: €10,999,984; TU Delft Budget: €500,000. Duration: 2022-2025 (36 months).

– *European Commission*: "HEIR: A holistic Cyber-Intelligence Platform for Secure Healthcare Environments" (EU Horizon Europe grant agreement 883275). Role: Co-Principal Investigator. Budget: €4,999,975; TU Delft Budget: €280,750. Duration: 2020-2024 (42 months).

– *European Research Council (ERC)*: Starting Grant "ResolutioNet. Resolving the Tussle in the Internet: Mapping, Architecture, and Policy Making" (H2020-ERC-2015-StG-679158). Role: Sole Principal Investigator. Budget: €1,499,875. Duration: 2017-2023 (72 months).

– *German Federal Ministry of Education and Research (BMBF)* "Berlin Institute for the Foundations of Learning and Data (BIFOLD)" (1IS18025A and 01IS18037A). Role: Principal Investigator. Budget:
Phase II: total funding €7,481,499, group's budget: €317,000, Duration: 2018-2022 (36 months).
Phase III: total funding €144,030,000, Duration: 2022-2028.

– *Farsight Security, Inc.* "Research Grant". Role: Sole Principal Investigator. Contribution: $50,000. Duration: 2021-2022 (12 months).

– *TU Berlin Internal Stategic Funding*. Role: Sole Principal Investigator. Budget: €14,000. Duration: 2019-2020 (3 months).

– *European Commission - Marie Skłodowska-Curie International Outgoing Fellowship for Career Development:* "CDN-H: Improving Performance and Cost of Content Delivery in a Hyperconnected World" (FP7-PEOPLE-2013-IOF-628441). Role: Sole Principal Investigator. Budget: €349,000. Duration: 2014-2017 (36 months).

– *European Commission*: "BigFoot: Big Data Analytics of Digital Footprints" (FP7-ICT-2011-8-317858). Role: Principal Investigator. Budget: €3,540,000; TUB Budget: €717,000. Duration: 2012-2015 (36 months). [🏆 **The project received the European Star Award**]

– *Germany-Greece Scholar Exchange Program Sponsored by DAAD and IKY (IKYDA):* "Optimal Management of Storage in Communication Networks and Cloud Systems". Role: Principal Investigator. Budget: €10,000. Duration: 2012-2013 (24 months).

– *Telekom Innovation Laboratories:* "Content Distribution Networks: Strategic Research Activites", support for Ph.D. and MSc students, and research hardware. Role: Sole Principal Investigator. Budget: €150,000. Duration: 2010-2014 (48 months).

– *Deutsche Telekom Laboratories Strategic Research Project:* "Overclouds: Building Overlays on top of Clouds". Budget: €40,000. Role: Sole Principal Investigator. Duration: 2009-2010 (24 months).

– I participated in the US National Science Foundation (NSF) Project: "Mapping Interconnection in the Internet: Colocation, Connectivity and Congestion" (Networking Technology and Systems (NeTS): Large: Collaborative Research, #1413905), PIs: David Clark (MIT), kc Claffy (CAIDA/UCSD). Duration: 2014-2017 (36 months).

– I participated in the European Commission project "CHANGE: Enabling Innovation in the Internet Architecture through Flexible Flow-Processing Extensions" (Information and communication technologies, ICT-2009.1.1 - The Network of the Future, FP7-ICT-257422). PIs: Mark Handley (UCL, UK), Olivier Bonaventure (UCL, Belgium), Laurent Mathy (Lancaster University), Anja Feldmann (TU Berlin), Costin Raiciu (Politechnica University, Bucharest), Luigi Rizzo (University of Pisa), Peter Feil (Deutsche Telekom), Felipe Huici (NEC), Adam Kapovits (Eurescom). Duration: 2009-2013 (40 months).

Research Community Service

Organizing Committee

General Chair: Privacy Enhancing Technologies Symposium (PETS) 2027,
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General Chair: IEEE European Symposium on Security and Privacy (EuroS&P) 2023,

General Chair: European Symposium on Research in Computer Security (ESORICS) 2023,
Publication Chair: Passive and Active Measurement Conference (PAM) 2021,
General Chair: Network Traffic Measurement and Analysis Conference (TMA) 2020,
Student Workshop Chair: ACM CoNEXT 2020,
Publication Chair: ACM SIGMETRICS 2018,
Publication Chair: ACM CoNEXT 2016,
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General Chair: ACM IMC 2011,
Publication Chair: IEEE AOC 2010,
Publication Chair: IEEE HotWeb 2006,
Web Chair: IEEE ICNP 2005,
Local Arrangement Chair: PAM 2005,
Publication Chair: IEEE ASWN 2004.

Technical Program Chair

Weizenbaum Institute workshop on Web and Internet Policy 2020
ACM SIGCOMM 2020 workshop on Network Application Integration/CoDesign (NAI) 2020; steering committee since 2021
ACM CoNEXT 2023, 2020 Student Workshop
ACM CoNEXT 2019
PAM 2018

Technical Program Committee Member ACM Internet Measurement Conference (IMC) 2026, 2025, 2024, 2022, 2021, 2020, 2019, 2018, 2016, 2015, 2014, 2011.
ACM Web Conference (WWW; Security, Privacy and Trust track) 2026, 2025 (Senior Member), 2023
IEEE Symposium on Security and Privacy (S&P) 2025.
ACM Conference on Computer and Communications Security (CCS) 2025, 2024.
ACM SIGCOMM 2025, 2013.
International Symposium on Research in Attacks, Intrusions and Defenses (RAID) 2025, 2023
NDSS Workshop on the Security of Space and Satellite Systems (SpaceSec) 2026
IEEE European Symposium on Security and Privacy (EuroS&P) 2024.
Privacy Enhancing Technologies Symposium (PETS) 2026, 2025, 2023.
USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2024.
ACM SIGMETRICS 2025, 2024.
ACM IMC Student Workshop 2025.
ACM Web Science Conference (WebSci) 2024, 2023, 2022.
Passive and Active Measurement (PAM) Conference 2024 (Review Task Force (RTF)), 2023, 2022, 2021, 2020, 2019, 2017, 2016.
IEEE/ESA Security for Space Systems (3S) 2024.
ACM CoNEXT 2024, 2022, 2021, 2020, 2018.
Performance 2023.
USENIX Annual Technical Conference (ATC) 2023, 2022.
ACM European Workshop on Systems Security (EuroSec) 2024, 2023, 2022.
The 2nd International Cryptoasset Analytics Workshop (CAAW), in Conjuction with ACM WWW 2023.
ACM EdgeSys 2021.
IEEE INFOCOM 2019.
ACM HotNets 2018.
Traffic Measurement and Analysis (TMA) Conference 2019, 2018, 2017, 2016, 2015, 2012.

IEEE LCN 2021.
Very Large Internet of Things (VLIoT) 2021
ACM SIGCOMM workshop on Secure and Programmable Network Infrastructure (SPIN) 2021, 2020,
ACM SIGCOMM workshop on Technologies, Applications, and Uses of a Responsible Internet (TAURIN) 2022, 2021
ACM SIGCOMM NAI 2022, 2021, 2020
ACM ICN 2019,
IEEE ICNP 2019, 2017, 2015,
ITC 2017,
SWFAN 2016,
ACM SIGCOMM 2016 posters and demos session,
ACM CoNEXT Student Workshop 2023, 2022, 2021, 2014, 2011, 2009,
EWSDN (2015, 2014, 2013),
IEEE P2P 2012,
IEEE IPDPS 2012 Ph.D. forum,
DCPerf 2012,
ACM SIGMETRICS 2010 (Shadow),
IEEE Globecom 2009,
ACM Simplex 2010, 2009,
SSS 2009,
ACM CoNEXT 2008 (Shadow).

Invited/External Reviewer

Communications of the ACM (Contributed Articles),
IEEE/ACM Transactions on Networking,
ACM SIGCOMM Computer Communication Review,
ACM Computing Surveys,
IEEE Transactions on Services Computing,
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IEEE Transactions Network and Service Management,
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Elsevier Ad Hoc Networks,
Telecommunication Systems Journal,
International Journal of Sensor Networks,
Journal of Communications and Networks,
ACM IMC 2013, 2010, 2009,
ACM CoNEXT 2009,
ACM SIGMETRICS 2012, 2008, 2007,
ACM PODC 2008,
ACM Multimedia 2004,
IEEE INFOCOM 2013, 2011, 2010, 2009, 2007, 2006, 2005,
IEEE ICNP 2005, 2004,
IEEE WCNC 2013,

IEEE e-Energy 2011,
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IEEE Global Internet Symposium 2007,
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- Best Cybersecurity Master Thesis (BCMT) Award 2023, The Netherlands; committee member
- ACM Internet Measurement Conference (IMC) Best Paper Award 2022; committee member
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- Contributing Expert of the EU Roadmap for Advanced Cloud Technologies under Horizon 2020

Advisory Boards

- 2025–present: ACM European Conference on Computer Systems (EuroSys) Steering Committee Member.
- 2023–present: ACM Internet Measurement Conference (IMC) Steering Committee Member.
- 2023–present: Member of the TU Delft Cyber Security Council (TUDCSC).
- 2025-2026: Member of the reaccreditation committee of the academic master's programme Security and Network Engineering of the University of Amsterdam.
- 2023: Member of the External Evaluation Committee (EEC) for the evaluation/accreditation process for Computer Science, Quality Assurance and Accreditation in Higher Education, Cyprus.
- 2022–present: Member of the Evaluation and Advisory Board of the Institute of Informatics and Telecommunications (IIT), National Centre for Scientific Research "Demokritos", Athens, Greece.

- 2022–present: TU Delft representative at the ACademic Cyber Security Society (ACCSS), The Netherlands.
- 2021–present: Scientific Coordinator of AI for Peace, Justice, and Security TU Delft initiative.
- 2019-2022: Advisory board member of the EU project INCOGNITO: IdeNtity verifiCatiOn with privacy-preservinG credeNtIals for anonymous access To Online services, H2020 (824015).
- 2019-2021: Administrative responsibility for research group Work and Cooperation in the Sharing Economy, Weizenbaum Institute for the Networked Society (Weizenbaum-Institut), Berlin, Germany

Invited Talks and Keynotes

"Data-Driven Cybersecurity" TU Delft, Aula, December 5, 2025.

"A Haystack Full of Needles: Detecting and Understanding Botnets in the Wild" Stanford Security Seminar, November 19, 2025, California, USA.

"Shading Light on the Dark Web", CFLW Live, June 12, 2025, The Hague, Netherlands.

"Cyberattacks, A view from the Network", Imperial College London, January 8, 2025, London, UK.

Student Event and Panel (Moderator: Jim Kurose) at IMC 2024, November 6, 2024, Madrid, Spain.

"Characterizing and Mitigating Phishing Attacks at ccTLD Scale?", Next Generation Networking (NGN) talk series, Turing Institute London, October 25, 2024.

Panelinst: "Industry-Academia Collaboration", EU Spatial Final Event, Delft, July 1, 2024.

"Adversarial Attacks: A View from the Network", Mondai Symposium, March 21, 2024.

Panelinst: "Towards Digital Infrastructure Regulatory Policy – Crafting Policies for the Digital Infrastructure we need for the Digital Economy Future", ITS Europe 2023, June 20, 2023.

Panelinst: "Managing the Cybersecurity Function", Vienna University of Economics and Business, May 9, 2023.

"Internet Measuremenets for Peace, Justice, and Security", Max Planck Institute for Informatics Internet Architecture Retreat, April 24, 2023.

"Measuring Web Cookies in Governmental Websites", BIFOLD Colloquium, October 10, 2022.

"Measuring Web Cookies in Governmental Websites", TU Munich Internet Research Retreat, September 13, 2022.

"Measuring and Protecting the Internet", Max Planck Institure for Informatics Internet Architecture Retreat, September 7, 2022.

"Measuring Web Cookies in Governmental Websites", Weizenbaum Institute, September 1, 2022.

Panelist: "Edge AI, IoT and Networking", FCN 2021, December 16, 2021.

"United We Stand: Collaborative Detection and Mitigation of Amplification DDoS Attacks at Scale", Dutch Anti-DDoS Coalition, December 9, 2021

"One Year in Lockdown: How the Waves of COVID-19 Impact Internet Traffic", GAIA Workshop, Simula, Oslo, Norway, October 13, 2021.

"One Year in Lockdown: COVID-19 and the Internet", UK Next Generation Network (NGN), May 21, 2021,

Panelist: "Communications Networks and the COVID-19 Pandemic" TPRC 48 (February 19, 2021),

"The Lockdown Effect: Implications of the COVID-19 Pandemic on the Internet Traffic", Weizenbaum Institute (November 25, 2020).

"Data-driven Cybersecurity", TU Delft (November 9, 2020)

"CONNECT 2.0: A Vision for CONNECT", Trinity College – CONNECT (October 15, 2020)

"The Fragile Internet: Assessing the Internet's Critical Infrastructure and Protocol Resilience", TU Delft (June 2, 2020).

"The Fragile Internet: Assessing the Internet's Critical Infrastructure and Protocol Resilience", TU Berlin (May 22, 2019).

"Networking and Policy: Mind the Gap", 11th IMDEA Networks Institute Annual Workshop (May 20, 2019).

"Networking + X", Keynote at CoNEXT 2018 Ph.D. Student Workshop (December 4, 2018),

"Deep Dive into BGP Communities", Columbia University - Systems and Networks seminar (September 6, 2018), SIGCOMM 2018 ERC Networking Symposium (August 24, 2018).

"The Measurement Lens: How to Understand and Improve the Internet", ECE Summer School, Technical University of Crete, Chania (July 23, 2018).

"Shedding Light on the Internet's Critical Peering Infrastructure Outages", Network Traffic Measurement and Analysis Conference (TMA) 2018 Experts Summit (June 26, 2018).

"Inferring BGP Blackholing Activity in the Internet", Measurement and Analysis for Protocols Research Group (maprg) at IETF-101 (March 20, 2018).

"Understanding and Improving the Resilience of the Internet using the Measurement Lens", Max Planck Institute for Informatics, (December 18, 2017).

"Detecting Peering Infrastructure Outages in the Wild", Yale University, (October 5, 2017); Trinity College Dublin, (October 3, 2017).

"The Evolving Internet Market and the Role of Coordination", 50th Freiburger Verkehrsseminar: The Future of the Internet - Innovation, Integration and Sustainability, University of Freiburg (7/2017).

"Mapping Peering Interconnections to a Facility", The 6th Workshop on Internet Economics (WIE 2015), University of California San Diego/CAIDA (12/2015)

"Identifying and measuring points of congestion", MIT Communications Futures Program (10/2015).

"Internet Exchange Points and the Internet", Yale University (3/2015), Massachusetts Institute of Technology (10/2014); Akamai Technologies (10/2014).

"Improving Performance and Cost of Content Delivery in a Hyperconnected World", The 5th Workshop on Internet Economics (WIE 2014), University of California San Diego/CAIDA (12/2014).

"Enabling CDN-ISP Collaboration", Massachusetts Institute of Technology (09/2014); Plenary Talk at RIPE 67 (10/2013); University of Athens (06/2013); OTE Labs (06/2013).

"How to Explore a Few Thousand Middleboxes in Your Free Time" (09/2013), NEC Labs Europe.

"Pushing CDN-ISP Collaboration to the Limit", University of Wisconsin at Madison (04/2013).

"On-demand Service Deployment in Microdatacenters", Université catholique de Louvain (10/2012); LabsOpen workshop on Telekom Cloud, Berlin (05/2012); Technische Universität Berlin (04/2012).

"Big Data and Networks: Mind the Gap", Institut Eurécom (10/2012).

"NetPaaS: Network Platform as a Service", Telekom Innovation Laboratories, Berlin (08/2012).

"Web Content Cartography", King's College – University of London (06/2012); University College London (03/2012).

"Content-aware Traffic Engineering", Athens University of Economics and Business (05/2013); University College London (06/2012); Universitatea Politehnica Bucuresti (05/2012); Boston University (07/2011); LabsOpen workshop on Network Architecture and Optimization, Berlin (08/2010).

"ISP-Applications Collaboration", CloudS workshop, Sydney (11/2010).

"ORACLE: An ISP-P2P Collaboration System", University of Athens (03/2009).

"Selfish Overlay Network Formation: Resource Allocation Strategies and Implications to Protocol Design", Technische Universität München (12/2009), Centre Tecnològic de Telecomunicacions de Catalunya (04/2008); Deutsche Telekom Laboratories Berlin (03/2008); Telefónica Research Barcelona (03/2008); Boston University (12/2007).

"Resource Allocation Strategies for Scalable Content Delivery on the Internet", Boston University (10/2007).

"The Selfish Neighbor Selection Problem In Overlay Networks", University of Athens (07/2007).

"A Large Deviations Approach to statistical Traffic Anomaly Detection", Boston University (02/2006).

Teaching Experience

Summer 2025: CS4430 Network Security, TU Delft
Summer 2025: CS4710 Hacking Lab, TU Delft
Summer 2025: CSE3000 Research Project, TU Delft
Summer 2025: CSE4700 Research Survey, TU Delft
Summer 2024: CSE3000 Research Project, TU Delft
Spring 2024: CS4430 Network Security, TU Delft
Spring 2024: CS4710 Hacking Lab, TU Delft
Spring 2024: CSE3220 Computer Security, TU Delft
Summer 2023: CSE3000H Honors Research Project, TU Delft
Summer 2023: CSE3000 Research Project, TU Delft
Spring 2023: CS4430 Network Security, TU Delft
Spring 2023: CS4710 Hacking Lab, TU Delft
Summer 2022: CSE3000 Research Project, TU Delft
Spring 2022: CS4430 Network Security, TU Delft
Spring 2022: CS4710 Hacking Lab, TU Delft
Fall 2020: Internet Routing Seminar, TU Berlin
Spring 2020: Internet Measurements, TU Berlin
Spring 2020: Internet Measurements Seminar, TU Berlin
Fall 2019: Internet Routing Seminar, TU Berlin
Spring 2019: Internet Measurements, TU Berlin
Fall 2018: Internet Routing Seminar, TU Berlin
Spring 2018: Internet Measurements, TU Berlin
Fall 2017: Network Algorithms, TU Berlin
Fall 2017: Internet Routing Seminar, TU Berlin
Spring 2014: Internet Measurements, TU Berlin
Spring 2013: Internet Measurements, TU Berlin
Spring 2007: Fundamentals of Computing Systems, Boston University
Spring 2006: Introduction to Computers, Boston University

Spring 2005: Introduction to Data Structures, Boston University
Summer 2005: Quantitative Methods for Information Systems, Boston University
Fall 2005: Introduction to Computers, Boston University
Spring 2004: Introduction to Computers, Boston University

Mentoring, Training and Advancement of Young Scientists

Marie Skłodowska-Curie Follows Mentor:

Antreas Dionysiou (Ph.D. from University of Cyprus); September 2025 – September 2027.

Post-doctoral Research Mentor:

Kris Oosthoek (Ph.D. from TU Delft, The Netherlands); ongoing.

Enrico Bassetti (Ph.D. from Sapienza University of Rome, Italy) → Researcher, European Space Agency, The Netherlands, and Research Affiliate with TU Delft Cybersecurity.

Harm Griffioen (Ph.D. from TU Delft, The Netherlands) → Assistant Professor, TU Delft, The Netherlands.

Habib Mostafaei (Ph.D. from Roma Tre University, Italy), BIFOLD Postdoctoral Researcher → Assistant Professor at the Eindhoven University of Technology, The Netherlands.

Stefano Cecconello (Ph.D. from University of Padova, Italy) → Telefonica Research, Barcelona, Spain.

Srdjan Matic (from University College London, UK; Ph.D. from University of Milan, Italy) → Research Faculty at IMDEA Software Institute, Madrid, Spain.

Volker Stocker (Ph.D. from Freiburg University, Germany) → Group Leader of the research group "Work and Cooperation in the Sharing Economy" at the Weizenbaum Institute for the Networked Society, Germany.

Matthias Rost (Ph.D. from TU Berlin) → Cloud Optimization Developer at SAP, Germany → Software Engineer at Observe, Germany.

Vasileios Giotsas (from CAIDA/UC San Diego, US; Ph.D. from UCL, UK) → Assistant Professor, Lancaster University, UK.

Nikolaos Chatzis (Ph.D. from TU Berlin, Germany) → Senior Performance Engineer, Akamai, Germany.

Ph.D. Research and Dissertation Mentor:

Ongoing:

Martin Mladenov (TU Delft, [expected 2029]),

Vissarion Moutafis (TU Delft, [expected 2029]),

Maarten Weyns (TU Delft, [expected 2029]),

Jesús Maria Gómez Moreno (TU Delft, [expected 2028]),

Yuqian Song (TU Delft, [expected 2028]),

Murtuza Mohammed (TU Delft, [expected 2028]),

Dario Ferrero (TU Delft, [expected 2028]),

Tjitske Koster (TU Delft, [expected 2028]),

Dazhuang Liu (TU Delft, [expected 2027]),

Antonis Chatzivasileiou (University of Crete and Foundation for Research and Technology Hellas, [expected 2027]),

Selim Ozcan (Simula Norway and University of Oslo, [expected 2026]),

Stefanos Koffas (TU Delft, [expected 2025]),

Marwan Darwish Khabbaz (TU Delft, [expected 2025]),

Cristian Munteanu (Max Planck Institute for Informatics and Saarland University, [expected 2025]),

Completed:

Taha Albakour (TU Berlin, Ph.D. 2024), "Lightweight Measurement Methods for Internet Infrastructure Remote Fingerprinting" → Postdoctoral Researcher, Max Planck Institute for Informatics.

Daniel Wagner (Max Planck Institute for Informatics and Saarland University, Ph.D. 2024), "Improving Reactive Capabilities of Internet Peering Infrastructure in Stressful Situations" → Researcher, DE-CIX.

Kris Oosthoek (TU Delft, Ph.D. 2023), "Quantifying Cybercriminal Bitcoin Abuse" → Dutch Government.

Said Jawad Saidi (Max Planck Institute for Informatics and Saarland University, Ph.D. 2023), "Characterizing the IoT Ecosystem at Scale" → Senior Networks Researcher, Huawei Munich Research Center, Germany.

Niklas Semmler (TU Berlin, Ph.D. 2021), "Data-driven Transfer Optimizations for Big Data in the Industrial Internet of Things" → SAP → Snowflake, Berlin, Germany.

Apoorv Shukla (TU Berlin, Ph.D. 2019), "Runtime Verification of Programmable Networks" → Senior Networks Researcher, Huawei Munich Research Center, Germany → Vice President, Expert Enterprise Network Architect, Deutsche Boerse, Germany.

Christoph Dietzel (TU Berlin, Ph.D. 2019), "Improving the Resilience Capabilities of Internet Infrastructures" → Global Head of Products & Research, DE-CIX, Frankfurt, Germany.

Costas Iordanou (TU Berlin, Ph.D. 2019), "Crowdsourcing as a Guardian of Transparency, Privacy, and Anti-Discrimination in a Personalized Web", → Researcher, Max Planck Institute for Informatics, Germany → Senior Researcher, Cyprus University of Technology → Assistant Professor, European University Cyprus.

Thomas Krenc (TU Berlin, Ph.D. 2019), "Revisiting the Interplay of Inter-Domain Traffic and Routing Policies" → Post-doctoral researcher, Naval Postgraduate School, USA → Researcher, CAIDA/University of California San Diego, USA.

Obi Akonjang (TU Berlin, Ph.D. 2018), "ISP Traffic Management via Flow Optimization"

Philipp Richter (TU Berlin, Ph.D. 2017), "Empirical Analysis of the Effects and the Mitigation of IPv4 Address Exhaustion", → Postdoctoral Associate, MIT CSAIL → Senior Research Scientist, Akamai.

Samuel DeLaughter (MIT EECS Ph.D. candidate, Summer 2017, MIT-Germany program).

Enric Pujol (TU Berlin, Ph.D. 2016), "Web content delivery, monetization, and search: back-office and advertisement traffic on the Internet" → Data Scientist, BENOCS, Berlin, Germany.

Benjamin Frank (TU Berlin, Ph.D. 2013), "Dynamic Deployment of Content Delivery Infrastructures using Network Cloud Resources" → SAP, Berlin, Germany.

Ingmar Poese (TU Berlin, Ph.D. 2013), "Towards Informed and Collaborative Content Delivery" → CTO, BENOCS, Berlin, Germany.

George Iosifidis (University of Thessaly; primary advisor: Prof. Iordanis Koutsopoulos, Ph.D. 2012), "Spec-

trum and Storage Capacity Management Using Network Economics and Optimization Methods" → Researcher, CERTH-Greece → Researcher, Yale University → Assistant Professor, Trinity College - University of Dublin → Assistant Professor, TU Delft.

Bernhard Ager (TU Berlin, Ph.D. 2011), "Impact of Locality in Content Distribution" → Researcher, ETH Zürich → Google, Switzerland.

Ph.D. Committee Chair or Member:

Ricardo Maria Yaben Lopezosa (Technical University of Denmark (DTU), 2026 [expected])

Kyriakos Psarakis (TU Delft, 2026 [expected])

Lucas Aubard (École Nationale Supérieure Mines-Télécom Atlantique, France, 2026 [expected])

Arwa Abdulkarim A Al Alsadi (TU Delft, 2025 [expected])

Yanqi Qiao (TU Delft, 2025), "Security of Visual Neural Networks: Backdoor Attacks and Adversarial Purification"

Léo Joseph Aloyse Weissbart (TU Delft, 2025), "Side-Channel Analysis with Deep Learning: An Evergrowing Ally in Hardware Security Evaluation"

Vincent Ghiette (TU Delft, 2025), "Threat Intelligence in the Early Stages of Cyberattacks"

Francesco Minna (Vrije Universiteit Amsterdam), "On the Automatic Detection and Remediation of Misconfigurations and Vulnerabilities in Cloud Ecosystems"

Hugo Bijmans (TU Delft, Ph.D. 2025), "Measuring Cybercrime"

Florine Willemke Dekker (TU Delft, Ph.D. 2025), "Graph-Based Reconstruction in Summation Sequences"

Huanhuan Chen (TU Delft, Ph.D. 2025), "Cryptosystems for Secure and Efficient Cloud Services"

Gorka Abad (Radboud University, Ph.D. 2025), "Beyond the Security of Deep Learning: An Exploration of Stealthy Backdoor Attacks in Computer Vision"

Petros Amanatidis (Democritus University of Thrace, Ph.D. 2025), "Methodologies for Optimal Data and Resource Management in Edge Computing"

Alfan Presekal (TU Delft, Ph.D. 2025), "Advanced Persistent Threat Detection and Correlation for Cyber-Physical Power Systems: Enhancing Resilience of Power Grid Operational Technologies"

Miguel Antonio Chavez Tapia (TU Delft, 2025), "Sunlight-based Passive VLC: Utilizing the sun to establish wireless connections" (reserved member)

Hanting Ye (TU Delft, 2025), "Through-Screen Computing"

Tianyu Li (TU Delft, 2024), "Data Privacy in Supply Chains and Machine Learning through Differential Privacy and Cryptography"

Ramin Yazdani (University of Twente, Ph.D. 2024), "Proactively Defending Against DDoS Attacks: Focusing on DNS Reflection and Amplification"

Seyedamirmasoud Ghiassi (TU Delft, Ph.D. 2024), "Label Alchemy: Transforming Noisy Data into Precious Insights in Deep Learning"(reserved member)

Georgios Siachamis (TU Delft, Ph.D. 2024), "Adaptivity for Streaming Dataflow Engines"

Christos Koutras (TU Delft, Ph.D. 2024), "Tabular Schema Matching for Modern Settings"

Marina Krcek (TU Delft, Ph.D. 2024), "Implementation Attacks Powered by Artificial Intelligence".

Mehdi Keshani (TU Delft, Ph.D. 2024), "Enhancing the Security of Software Supply Chains: Methods and Practices".

Ziyu Li (TU Delft, Ph.D. 2024), "On the Utility of Metadata to Optimize Machine Learning Workflows".

Mathew Vermeer (TU Delft, Ph.D. 2024), "From the Outside In: Predicting Internal Security Incidents with External Network Data".

Rui Wang (TU Delft, Ph.D. 2024), "Secure and Resilient Federated Learning".

Joseph Hejderup (TU Delft, Ph.D. 2024), "Fine-Grained Analysis of Software Supply Chains".

Jing Xu (TU Delft, Ph.D. 2024), "Connecting the Dots: Exploring Backdoor Attacks on Graph Neural Networks".

Enkeleda Bardhi (Sapienza University of Rome, Italy, Ph.D. 2024), "Cybersecurity at the Intersection of Modern and Future Networking".

Huimin Li (TU Delft, Ph.D. 2024), "HW/SW Co-design for Security Systems and the Investigation of Deep Learning-based Side-Channel Analysis".

Gaetano Pellegrino (TU Delft, Ph.D. 2023), "Learning Automata for Network Behaviour Analysis".

Zakaria Najm (TU Delft, Ph.D. 2023), "On the real-world security of cryptographic primitives: From theory to practice".

Troya Cagil Koylu (TU Delft, Ph.D. 2023), "Countermeasures Against Fault Injection Attacks in Neural Networks and Processors".

Elsa Turcios Rodriguez (TU Delft, Ph.D. 2023), "One Thing after Another: The Role of Users, Manufacturers, and Intermediaries in IoT Security".

Santiago Andres Azcoitta (Universidad Carlos III de Madrid and IMDEA Networks Institute, Spain, Ph.D. 2023), "Towards a Human-Centric Data Economy" → Postdoctoral Researher, IMDEA Networks Institute.

Lichao Wu (TU Delft, Ph.D. 2023), "The Circle of DL-SCA: Improving Deep Learning-based Side-channel Analysis" → Security Evaluator at SGS Brightsight and Postdoctoral Researcher at Radboud University.

Stones Dalitso Chindipha (Rhodes University, South Africa, 2022), "Evaluation of Small Aperture Network Telescopes for Threat Intelligence Gathering Using IBR Data".

Ahmad Nasikun (TU Delft, 2022), "Efficient Methods for Spectral Geometry Processing" (reserved member)

Belma Turkovic (TU Delft, Ph.D. 2022), "Enabling Low-Latency Applications Using Programmable Networks" → Junior scientist innovator at The Netherlands Organisation for Applied Scientific Research (TNO), The Netherlands.

Ahmad Alhilal (Hong Kong University of Science and Technology, Ph.D. 2022), "Reliable and Real-time Content Streaming for Cloud and Edge Computing" → Postdoc Fellow, Hong Kong University of Science and Technology, Hong Kong.

Georgia Fragkouli (EPFL, Switzerland, Ph.D. 2022), "Toward Internet Performance Transparency" → Postdoctoral Researcher, ETH Zurich.

Qasim Lone (TU Delft, The Netherlands, Ph.D. 2022), "SAVing the Internet: Measuring the Adoption of Source Address Validation (SAV) By Network Providers" → Senior Research Engineer, RIPE NCC, The Netherlands.

Moritz Christian Müller (University of Twente, The Netherlands, Ph.D. 2021), "Making DNSSEC Future Proof" → Data Scientist at SIDN, The Netherlands.

Kashyap Thimmaraju (TU Berlin, Ph.D. 2020), "From Threat to Solutions in Datacenter Networks" → Postdoctoral Researher at Humboldt University of Berlin, Germany.

Mattijs Jonker (University of Twente, The Netherlands, Ph.D. 2019), "DDoS Mitigation: A Measurement-Based Approach" → Assistant Professor, University of Twente, The Netherlands

Theresa Enghardt (TU Berlin, Ph.D. 2019), "Informed Access Network Selection to Improve Application Performance" → Senior Software Enigineer at Netflix, USA.

Christian Donner (TU Berlin, Ph.D. 2019), "Bayesian inference of inhomogeneous point process models: Methodological advances and modelling of neuronal spiking data" → Senior Data Scientist at Swiss Data Science Center, Switzerland.

Thomas Krenc (TU Berlin, Ph.D. 2019), "Revisiting the Interplay of Inter-Domain Traffic and Routing Policies" → Postdoctoral Researcher at Naval Postgraduate School, USA → University of California San Diego/CAIDA, USA.

Research Engineers:

Wouter Jehee (2025 - ongoing)

MSc Thesis Mentor:

ongoing:

Kristoffer Eriksen (TU Delft, MSc 2026 [expected])

Cristian Perlog (TU Delft, MSc 2026 [expected])

Adrian Josan (TU Delft, MSc 2026 [expected])

Adrian Munteanu (TU Delft, MSc 2026 [expected])

Gert-Jan Schaap (TU Delft, MSc 2026 [expected])

Nikiforos Kyparos (TU Delft, MSc 2026 [expected])

Andrea Malnati (TU Delft, MSc 2026 [expected])

Konstantin Dimitrov (TU Delft, MSc 2026 [expected])

Kevin Zhao (TU Delft, MSc 2025 [expected])

Jegor Zelenjak (TU Delft, MSc 2025 [expected])

completed:

Aikaterini Lionta (University of Crete, MSc 2025), "Comparing BGP Ecosystems Across Nations"

Tsvetomir Hristov (TU Delft, MSc 2025), "An Intrusion Detection System using Graph Neural Networks"

Tamara Tataru (TU Delft, MSc 2025), "Through the Dependency Maze: A Data-Driven Approach to Dependency Risk Prioritization"

Velyan Kolev (TU Delft, MSc 2025), "Localhost Isn't Local On the Dark Web: Attributing Onion Services via Exposed Apache Server-Status Pages on the Dark Web"

Martin Mladenov (TU Delft, MSc 2025), "When Peers Disappear: Protocol Denial of Service Attacks on BGP Routers"

Shreyas Konjerla (TU Delft, MSc 2025), "Back To The Future Security: Analysis of the Network Time

Protocol and its Implementations"

Chrysanthos Kindynis (TU Delft, MSc 2025), "Breaking the Trade-Off Adaptive Optimization for Scalable, Minimal Role-Based Access Control"

Ioan-Cristian Oprea (TU Delft, MSc 2025), "Lost in Reassembly: Exploiting IP Fragmentation in Computer Networks"

Dea Llazo (TU Delft, MSc 2025), "Mitigating Alert Fatigue through Large Language Models: From Alert Enrichment and Prioritization to Full Automation of Incident Investigation"

Vissarion Moutafis (TU Delft, MSc 2025), "MORA: Hunting Space Bugs in your Sleep"

Maarten Weyns (TU Delft, MSc 2025), "Exploring the Gorillas in the Malware Jungle: Investigating the communication and attack characteristics of the Gorilla botnet"

Nathan Deridder (TU Delft, MSc 2024), "DNS2Vec for malicious domain detection A Novel Approach to Detecting newly registered Malicious Domains through Word Embeddings"

Nils Bijlsma (TU Delft, MSc 2024), "BGP Hijacks to Man-in-the-Middle DNS"

Ignjat Pejic (TU Delft, MSc 2024), "Adding Context to Alerts"

Wouter Jehee (TU Delft, MSc 2024), "WALL-EYE: Taking a look at CubeSat security Security analysis of CubeSats on a physical testbed"

Yuqian Song (TU Delft, MSc 2024), "Leveraging Database Honeypots to Gather Threat Intelligence"

Frank Broy (TU Delft, MSc 2024), "Unveiling the Evolution: Analysing Generational Variances in Malware Families"

Murtuza Mohammed (TU Delft, MSc 2024), "Characterising Botnet Scans through Network Telescope Data"

Vyshnavi Molakala Narasimhalu (TU Delft, MSc 2024), "Probing the Dark Web: Optimizing Port Scanning for Dark Web Protocol Analysis"

Giorgos Koursiounis (TU Delft, MSc 2024), "The Good, the Bad, and the Scanned: An Empirical Study of the Origins of Internet-wide Scanners"

Akash Amalan (TU Delft, MSc 2024), "Malware Evolution Unraveling Malware Genomics: Synergistic Approach using Deep Learning and Phylogenetic Analysis for Evolutionary Insights"

Maarten van Leeuwen (TU Delft and Leiden University, Institute of Security and Global Affairs, Master in Cybersecurity, MSc 2024), "Observing IPv6 Scanning on Public Cloud Platforms"

Louise van der Peet (TU Delft, MSc 2023), "Increasing Privacy-related Transparency on the Web using a Self-disclosing Standard"

Paolo Arash Kazemi Koohbanani (TU Delft, MSc 2023), "Parallel Dissector Parallel Processing of DDoS Data"

Boris van Groeningen (TU Delft, MSc 2023), "Analyzing the Use of CNAME Cloaking in the Wild"

Aleksandra Taneva (TU Delft, MSc 2023), "Reverse Engineering Web Cookies"

Jean-Paul van Assche (TU Delft and Leiden University, Institute of Security and Global Affairs, Master in Cybersecurity, MSc 2023), "The development of Cyber Security Standards for Wireless IoT Devices in a Multistakeholder Environment"

Mike van der Boon (TU Delft, MSc 2023), "Looking at IoT-related risks for the Smart Grid"

Stijn Kramer (TU Delft, MSc 2022), "Hardening Cookies: Preventing Use of Stolen Cookies byThird Parties"

Ahmet Güdec (TU Delft, MSc 2022), "RPL-based Passive OS Fingerprinting in Low- power and Lossy Wireless Sensor Networks"

Kamil Balitzki (TU Berlin, MSc 2022), "BGP Smalltalk: A Systematic Analysis of BGP Attribute Changes"

Max Franke (TU Berlin, MSc 2022), "Designing and Implementing an AnycastLoad Balancing System with HappyEyeballs"

Nikhil Singh (TU Berlin, MSc 2021), "End-to-end available bandwidth measurement in P4"

Sergiu-Adrian Lazar-Angelescu (EIT Digital Master, TU Eindhoven and TU Berlin, MSc 2020, co-supervisor with Aristides Gionis, KTH, Sweden) "Optimizing Online Meeting Strategies in Social Environments"

Taha Albakour (TU Berlin, MSc 2020, co-supervisor with Rob Beverly, NPS, USA) "Towards a Methodology for Router Fingerprinting"

Preethi Ramachandran (TU Berlin, MSc 2020), "A Longitudinal Study of the Robots Exclusion Standard"

Marcin Bosk (TU Berlin, MSc 2020), "Evaluating the Benefits of Network Slicing for QoE-awareness in 5G Networks"

Kevin Nico Hudemann (TU Berlin, MSc 2020), "P4 Verification with Machine Learning"

Bashar Otoum (TU Berlin, MSc 2020), "Investigating BGP Attribute-based Attacks"

Ferdows Shahryar (TU Berlin, MSc 2019), "Analysis and Vulnerability Assesment of Internet Registries"

Siva Rajendran (TU Berlin, MSc 2019), "Measurement and Analysis of Web Traffic Interception by Man-in-the-Middle Attacks"

Zsolt Vagi (TU Berlin, MSc 2019), "Towards verifying P4 programs"

Lars Prehn (TU Berlin, MSc 2018, 2nd reader, co-supervisor with Rob Beverly, NPS, USA), "Re-evaluating the AS-level Multi-Tier Model in the Era of Internet Flattening"

Jinji Shen (TU Berlin, MSc 2014), "Measuring the Indirect Prefix Delegations using Public Routing Information"

Boxuan Li (TU Berlin, MSc 2014), "Measurement and Analysis of SoShare Hybrid Server-P2P System"

Florian Streibelt (TU Berlin, MSc 2013), "Evaluating EDNS-client-subnet Extension in the Wild"

Pinar Acar (TU Berlin, MSc 2013), "Comparing IPv4 and IPv6 Performance in the Wild"

Alexander Kordecki (TU Berlin, MSc 2013), "Network Traffic Measurement of Data-intensive Computing Architectures"

Jun Jiang (TU Berlin, MSc 2013), "Improving Video Streaming Applications with ISP-assisted Server Selection"

Thomas Krenc (TU Berlin, MSc 2012), "Measurement and Characterization of Content Distribution in BitTorrent"

Benjamin Frank (TU München, MSc 2009), "Developing Efficient Ranking Algorithms for the Oracle Service"

Ingmar Poese (TU Berlin, Diplom 2009), "The Oracle Server: Implementation and Performance Evaluation"

Vassilis Lekakis (FORTH-ICS/University of Crete, MSc 2009), "The EGOIST Overlay Routing System"

MSc Thesis Chair/Committee Member:

Cristina Stoleriu (TU Delft, MSc 2025), "Time-Sensitive VPN Traffic Classification"

Sem Duveen (TU Delft, MSc 2025), "Visualising Network Data for Network Forensics"

Viraj Biharie (TU Delft, MSc 2025), "Engineering Encrypted Multi-Maps with Controlled Access and Volume Leakage for Multi-Dimensional Queries"

Jaylan Lee (TU Delft, MSc 2025), "Towards Quantum-Safe Smart Contracts on Hyperledger Fabric"

Kostadin Penchev (TU Delft, MSc 2025), "Trust in network nodes: Implementation of secure communication and data storage using a post-quantum encryption algorithm and signature scheme with a blockchain environment"

Mingyu Gao (TU Delft, MSc 2025), "HARSH but Subtle: Horizontal semAntic Robust Stealthy Backdoor with High-fidelity, context-aware triggers"

Peijie Li (TU Delft, MSc 2025), "Learning from Leakage: Database Reconstruction from Just a Few Multi-dimensional Range Queries"

Delano Flipse (TU Delft, MSc 2025), "Exploring Beyond the Happy Path: Practical Automated Network-Level Fault Injection Testing of Service-Oriented Distributed Systems"

Alin-Petru Roșu (TU Delft, MSc 2025), "Towards Minimal Certificates for Federated Space Public Key Infrastructure"

Giulio Segalini (TU Delft, MSc 2025), "Fair Transaction Ordering on DAGs: Preventing MEV extraction without sacrificing practicality"

Sergey Datskiv (TU Delft, MSc 2025), "Prompt, Seed, Generate: Seeding For Test Case Generator with LLMs"

Selena Mendez (TU Delft, MSc 2025), "Backdoor Attacks in Active Learning: An Extensive Analysis of Backdoor Injection in Active Learning-Trained Computer Vision Models"

Sebastiaan van Moergestel (TU Delft, MSc 2025), "Improving Defenses Against Backdoors in Federated Learning using Data Generation"

Andrei Popovici (TU Delft, MSc 2025), "MSID: A Multi-Scale Diffusion-Based Inpainting Defense Against Adversarial Attacks"

Akif Öztürk (TU Delft, MSc 2024), "SHAPECAP: A secure and user friendly CAPTCHA method"

Daan Prinsze (TU Delft, MSc 2024), " PinDown: Generalized Application Code Identification And Functional Component Analysis In RTOS-based Firmware"

Mick Koertshuis (TU Delft, MSc 2024), "Scanner Clustering How can clustering techniques be applied to classify and identify slow scanners based on their behavior and attributes?"

Lesley Franschman (TU Delft, MSc 2024), "The Vesper Protocol: Leveraging Zero-Knowledge Proofs and SGX Enclaves in Hyperledger Fabric Smart Contracts"

Andy Chiu (TU Delft, MSc 2024), "Behavioural Correlation of Distributed Scanners"

Alexander Schnäpp (TU Delft, MSc 2024), "ML Based Detection of Malicious Packages"

Aaron J. van Diepen (TU Delft, MSc 2024), "HSTS-Enforced Enhancing HTTP Strict Transport Security through Secure-by-Default Principles"

Zihao Xu (TU Delft, MSc 2024), "Demystifying LLM Attacks And Defense: A Comprehensive Study with Improved Attack Technique"

Alberto Castagnaro (TU Delft, MSc 2024), "Offensive AI for Directory Enumeration"

Mostafa Khattat (TU Delft, MSc 2024), "Completely FROST-ed: IoT issued FROST signature for Hyper-

ledger Fabric blockchain"

Aleksei Simonov (TU Delft, MSc 2024), "Backdoor attacks in federated learning with regression"

Bjorn Ho (TU Delft, MSc 2023), "Searchable Symmetric Encryption Attacks: More power with more knowledge"

Yana Angelova (TU Delft, MSc 2023), "Once upon a Tuesday: Longitudinal analysis of the vulnerability management of Dutch municipalities"

Manning Zhang (TU Delft, 2023), "Inject Less, Recover More: Unlocking the Potential of Document Recovery in Injection Attacks against SSE"

Cyril H. Trap (TU Delft, 2023), "Impact of replacing TCP by QUIC in Tor on website fingerprinting resistance"

Mariana Samardzic (TU Delft, 2023), "Blockchain-Based Verifiable and Privacy-Preserving Machine Learning Inference"

Bart van Schaick (TU Delft, 2023), "Introducing Privacy-Enhancing Technologies to Consortium Blockchains"

Stuart Gunput (TU Delft and Leiden University, Institute of Security and Global Affairs, Master in Cybersecurity, MSc 2023), "Right on Course: Toward Cyber Secure Sailing?"

F.E.G. Miedema (TU Delft, 2022), "Behind the Botnet: Evaluating Avalanche's security controls using a reconstruction of its anatomy from forensic evidence"

J.C.H. Thomas (TU Delft, 2022), "SSE Is Not As Secure As It Looks: New Attacks On Range Queries Using PQ-Trees And Auxiliary Information"

Hakan Ilbas (TU Delft, 2022), "Attacks on Searchable Symmetric Encryption Systems: Revisiting Similardata and File Injection Attacks"

Rick Huisman (TU Delft, MSc 2022), "Securing BGP Communities"

Sven Thiessen (TU Delft, MSc 2022), "IoT Device Type Identification on Low-End Dedicated Hardware Devices"

S.L. Maquelin (TU Delft, MSc 2022), "System Call Argument Filtering for Interpreted Languages"

ThanhDat Nguyen (TU Delft, MSc 2022), "Measuring the Impact of Certificate Transparency on Scanning Traffic"

Shafi Afridi (TU Berlin, MSc 2022), "Network-aware Placement for Geo-Distributed Stream Analytics"

Alexander Hardt (Naval Postgraduate School, US, MSc 2019, 2nd reader, co-supervisor with Rob Beverly, NPS, USA), "Characterizing BGP Community Irregularities Towards an Anomaly Detection Engine"

MSc Project Mentor:

Klara Schmitt (TU Berlin 2018), "User Agent Measurement"

Thomas Krenc (TU Berlin 2012), "Measurement and Characterization of Video Streaming Architectures"

Thomas Krenc, Tobias Jacobowitz, Sebastian Garn (TU Berlin 2011), "Season: A Dynamic Load Balancer for Virtual Environment"

Bachelor Thesis Mentor:

Martin Mladenov (TU Delft, CSE3000 student project/CS Honors Thesis, BSc 2023), "Detection of critical

infrastructure devices on the public Internet"

Felix Matthes (TU Berlin, BSc 2022), "Stress Test Evaluation of Home Network Equipment"

Leonard Becker (TU Berlin, BSc 2021), "Visibility of Large Scale Outages on the Control Plane"

Matthias Götze (TU Berlin, BSc 2021), "Measuring Web Cookies in Government Websites"

Stefan Wahl (TU Berlin, BSc, 2020), "Evaluation of Path Validation Towards BGP NEXT-HOP"

Lily Hügerich (TU Berlin, BSc 2020), "Characterizing P4 Programs for Patchability"

Jan Pommerening (TU Berlin, BSc 2018), "Measuring Authorized Digital Sellers of Popular Websites"

Thomas Krenc (TU Berlin, BSc 2010), "Demographic Measurement of Popular BitTorrent Swarms"

Bachelor Thesis Committee Member:

Petra Gulyas (TU Delft, BSc 2025), "Manipulating Head Pose Estimation Models: Exploring Deep Regression Models' Vulnerability to Full Image Backdoor Attacks"

Saïd-Ahmed Koudjeti (TU Delft, BSc 2025), "Backdoor attacks in regression models: Illustrated with WaNet attacks on a head pose estimation model"

Mateusz Surdykowski (TU Delft, BSc 2025), "Full Image Backdoor Attacks on Gaze Estimation Networks: A Study on Regression Vulnerabilities"

Bart Coster (TU Delft, BSc 2025), "Backdoor attacks on deep regresion models: BadNet attacks on Headpose estimation models"

Ezrah Ligthart Schenk (TU Delft, BSc 2025), "Backdoor Attacks on 3D Gaze Estimation Models – When BadNets Meet Your Eyes: Data Poisoning in Deep Regression"

Samuel Bruin (TU Delft, BSc 2025), "Global Illumination using ReSTIR DI and Photon-Mapped Virtual Point Lights: An improvement on Instant Radiosity"

Jan de Munck (TU Delft, BSc 2025), "Subpixel level Pathtracing: How considering subpixels can increase the perceived resolution of a pathtracer"

Cristian Doboş (TU Delft, BSc 2025), "Perception-based Optimization of Wavelength Sampling Distributions for Spectral Rendering"

Rafayel Gardishyan (TU Delft, BSc 2025), "A Better Light Candidate Generation Algorithm for ReSTIR Ray Tracing Using an Acceleration Structure to Identify Relevant Lights"

Vlad Ştefănescu (TU Delft, BSc 2025), "Worldspace ReSTIR for direct illumination: Storing precomputed reservoir values with a normal-aware hashgrid"

R. Snellenberg (TU Delft, BSc 2023), "Shortest Path algorithms for the traversal of an Order-5 square tiling from within a confined space"

K.M. Slotboom (TU Delft, BSc 2023), "Rendering Non-Euclidean Space in Virtual Reality Using Portals"

S.A. Jochems (TU Delft, BSc 2023), "Mini-map positioning for Virtual Reality environments in hyperbolic space"

A. de Vries (TU Delft, BSc 2023), "Mapping hyperbolic space for the virtual reality game Holonomy"

J.A. Rijsdijk (TU Delft, BSc 2023), "Exploring the Impact of a Procedurally Generated Environment on Immersion in Virtual Hyperbolic Space"

M.A. Mladenov (TU Delft, BSc 2023), "Detection of critical infrastructure devices on the public Internet"

N.T. Bui (TU Delft, BSc 2022), "Factors related to dataset that influence the shape of learning curves"

L.G. Kroes (TU Delft, BSc 2022), "GENERALIZE: A framework for evolving searching constraints for domain-specific languages in program synthesis"

Z. Chen (TU Delft, BSc 2022), "Explain Strange Learning Curves in Machine Learning"

D. Kim (TU Delft, BSc 2022), "Different approaches to fitting and extrapolating the learning curve"

F.J. Radomski (TU Delft, BSc 2022), "Evolving Design Patterns for Program Synthesis"

P.I. Tempelman (TU Delft, BSc 2022), "Evolving a Domain-Specific Language to Speed Up Program Synthesis"

M.T. Okon (TU Delft, BSc 2022) "Evolving a Search Procedure for Program Synthesis"

N. Efthymiou (TU Delft, BSc 2022), "Genetic Algorithm for Evolving an Objective Function of a Program Synthesizer"

D.V.Q. Nguyen (TU Delft, BSc 2022), "In Search of Best Learning Curve Model"

P. Bhaskaran (TU Delft, BSc 2022), "To Tune or not to Tune: Hyperparameter Influence on the Learning Curve"

Junior Researcher Experience

– *Research and Teaching Fellow* September 2003 – September 2008
Boston University, Computer Science Department, Web and Internetworking Group.

– *Affiliated Researcher* July - August 2006
University of Athens, Department of Informatics and Telecommunications.

– *Affiliated Researcher* April - August 2003
Greek National Center for Scientific Research, Institute of Informatics and Telecommunications.

– *Undergraduate Affiliated Student* September 2001 - August 2002
Technical University of Crete, Electronic and Computer Engineering Department, Information and Computer Networks Laboratory.

– *Telecommunications Engineer internship* August - September 2002
Value Added Services, NOKIA Networks, NOKIA Hellas.

– *Software Developer internship* September 2001 - February 2002
Technical University of Crete, Electronic and Computer Engineering Department, Laboratory of Distributed Multimedia, Information Systems and Applications.

– *Programmer internship* August - September 1999, August 2001
Social Security Institute, Greece.

Current as of November 28, 2025