Curriculum vitæ

Mario Di Francesco, *Ph.D.* (2009, University of Pisa, Italy)
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Google Scholar: https://scholar.google.com/citations?user=xuJ3KAYAAAAJ

Current position

Since Apr '22 **Full Professor**, *Aalto University*, Department of Computer Science

Since Oct '22 **Senior DevOps Consultant**, *Eficode*, Helsinki

Professional experience

May '25 – Jul '25 **Visiting Faculty**, *Yonsei University*, School of Computing
- Host: Prof. Hojung Cha

Jan '25 – Apr '25 **Visiting Professorial Fellow**, *UNSW Sydney*, School of Computer Science and Engineering, Faculty of Engineering
- Host: Prof. Salil Kanhere

Jan '18 – Mar '22 **Associate Professor (tenured)**, *Aalto University*, Department of Computer Science

Aug '13 – Dec '17 **Assistant Professor**, *Aalto University*, Department of Computer Science

Dec '15 – Apr '16 **Visiting Associate Research Scholar**, *Princeton University*, Department of Electrical Engineering, School of Engineering and Applied Science
- Host: Prof. Mung Chiang

Jan '12 – Dec '14 **Adjunct Faculty**, *The University of Texas at Arlington*, Department of Computer Science and Engineering

Jan '12 – Jul '13 **Postdoctoral Researcher**, *Aalto University*, Department of Computer Science and Engineering
- Supervisor: Prof. Tuomas Aura

Sep '09 – Dec '11 **Research Associate**, *The University of Texas at Arlington*, Department of Computer Science and Engineering
- Supervisor: Prof. Sajal K. Das

Feb '09 – Aug '09 **Researcher**, *St. Anna's School of Advanced Studies*, Pisa

Sep '08 – Jan '09 **Visiting Scholar**, *The University of Texas at Arlington*, Department of Computer Science and Engineering
- Supervisors: Prof. Sajal K. Das and Prof. Mohan Kumar

Education

May 2009 **Ph.D. in Information Engineering**, *University of Pisa*, Italy
- Title: Adaptive Strategies for Energy Conservation in Wireless Sensor Networks
- Advisor: Prof. Giuseppe Anastasi

May 2005 **M.Sc. in Computer Engineering**, *University of Pisa*, Italy, Cum laude

October 2002 **B.Sc. in Computer Engineering**, *University of Pisa*, Italy, Cum laude

Research projects

Currently active

2023 – 2027 **Efficient Deep Neural Network Computation with Resource-Constrained Devices**, *Academy of Finland*, Principal investigator, Award amount: 704,521 €

- This project aims at building novel methods for deep neural network inference to achieve a target accuracy based on the resource constraints of embedded devices, through both model compression and collaborative execution

2023 – 2025 **CRUISE: A Cross-system Architecture Design for Autonomous Wireless Networks based on Lifelong Machine Learning**, *Academy of Finland*, Principal investigator and consortium leader, Award amount: 257,808 €

- This project aims at advancing next-generation networking systems through optimal integration of information, communication, and artificial intelligence
- Collaborative project with University of Oulu, University of Illinois Chicago, and University of Massachusetts Amherst

Completed

2020 – 2024 **Mobile Cross Reality through Immersive Computing**, *Academy of Finland*, Principal investigator, Award amount: 578,076 €

- This project aims at overcoming the limited resources of mobile devices for cross-reality by moving heavy processing to remote servers, while guaranteeing high quality and low latency for a truly immersive user experience
- Collaborative project with University of Helsinki

2019 – 2021 **Mission-Critical Internet of Things Applications over Fog Networks**, *Academy of Finland*, Principal investigator and consortium leader, Award amount: 345,634 €

- This project aims at building novel mathematical and software tools to optimize the performance of large-scale IoT applications over heterogeneous devices, with focus on reliable and low-latency operations
- Collaborative project with University of Oulu and VTT

2016 – 2020 **Enabling a User-friendly and Dependable Internet of Things**, *Academy of Finland*, Principal investigator, Award amount: 706,674 €

- This project aimed at building usable and secure methods to configure, manage and maintain a large number of Internet-connected devices, with the ultimate goal to improve the dependability of services built on top of the Internet of Things

2016 – 2018 **Harnessing Available Spectrum for Mobile Video and Beyond**, *Academy of Finland*, Principal investigator, Award amount: 299,995 €

- This project aimed at realizing services based on research in dynamic spectrum access and cognitive radios, with focus on mobile video delivery

2014 – 2016 **WiFiUS: Ubiquitous Video over Dynamic Spectrum**, *Academy of Finland*, Principal investigator and consortium leader, Award amount: 227,475 €

- This project aimed at making cognitive radio networks suitable as a platform to deliver ubiquitous wireless video
- Collaborative project with University of Helsinki and Princeton University

2014 **Flexible Spaces Services**, *EIT Digital* (formerly EIT ICT Labs), Smart Spaces action line, Task leader, Award amount: 62,000 €

- This project aimed at developing technical solutions for efficient use of shared resources through flexible ways of working in corporate environments

2011 – 2014 **Mobile Application Security through Remote Sandboxing and Cloud Computing**, *US National Science Foundation*, Principal investigator, Award amount: $ 199,986

- This project aimed at defining a cloud computing framework to provide application security for heterogeneous mobile devices and platforms

2011 – 2013 **Crafting a Human-Centric Environment to Support Human Health Needs**, *US National Science Foundation*, Principal investigator, Award amount: $ 300,453

- This project realized an assisted-living environment that supports activity recognition and learning algorithms to improve health and wellness of elderly people

2010 – 2013 **Improving the Efficiency of Wireless Sensor Networks Using Principles of Genomic Robustness**, *US National Science Foundation*, Principal investigator, Award amount: $ 117,268

- This project established a mapping between the optimized structure of genetic material and wireless sensor networks for enhanced reliability and fault tolerance

2010 – 2012 **Gulf of Mexico Oil Spill Impact on Beach Soil: Radar and Radar Sensor Network-Based Approaches**, *US National Science Foundation*, Co-principal investigator, Award amount: $ 152,000

- This project employed a radar sensor network to collect data of oil spilled beach soils in the Gulf of Mexico and to perform risk assessment

Teaching

Courses

Since 2020 **CS-E4190 Cloud Software and Systems**, *Responsible teacher*, master level, Aalto University

2020 – 2021 **CS-C3140 Operating Systems**, *Co-responsible teacher*, bachelor level, Aalto University

2019 – 2021 **CS-EJ4104 Introduction to DevOps**, *Responsible teacher*, lifelong education (FiTech), Aalto University, previously:

- CS-EJ4101 Introduction to DevOps (Fall 2019)

2019 – 2020 **CS-EJ4102 Mobile Application Development with Android**, *Responsible teacher*, lifelong education (FiTech), Aalto University

2019 **CS-EJ4103 Cloud Systems and Technologies**, *Responsible teacher*, lifelong education (FiTech), Aalto University

2016 – 2019 **CS-E4100 Mobile Cloud Computing**, *Responsible teacher*, master level, Aalto University

2012 – 2019 **CS-E4000 Seminar in Computer Science**, *Responsible teacher*, master level, Aalto University, previously:

- CSE-E5000 Seminar on Software Systems, Technologies and Security (2015 – 2016)
- T-110.5191 Seminar on Internetworking (Spring 2015)

Spring 2017 **CS-E4002 The Internet of Things: Selected Themes**, *Responsible teacher*, master level, Aalto University

2012 – 2017 **CS-E4005 Methods and Tools for Network Systems**, *Responsible teacher*, master level, Aalto University, previously:

- CSE-E4430 Methods and Tools for Network Systems (2014 – 2015)
- T-110.6130 Systems Engineering in Data Communications Software (2012 – 2013)

2012 – 2016 **CS-E4130 Computer Networks II – Advanced Features**, *Guest lecturer*, master level, Aalto University, previously:

- T-110.5111 Computer Networks II – Advanced Features (2012 – 2015)

Fall 2015 **T-110.5150 Applications and Services in Internet**, *Guest lecturer*, master level, Aalto University

Fall 2011 **CSE 5318 Applied Graph Theory and Combinatorics**, *Guest lecturer*, master level, The University of Texas at Arlington

2006 – 2009 **Operating Systems**, *Teaching assistant*, post-graduate level, University of Pisa and National Research Council

2007 – 2008 **Network Technologies**, *Teaching assistant*, post-graduate level, University of Pisa and Naval Academy of Livorno

2006 – 2009 **Operating Systems and Computer Networks**, *Teaching assistant*, bachelor level, University of Pisa

2006 – 2009 **Operating Systems**, *Teaching assistant*, master level, University of Pisa

Teaching service

2018 – 2024 **Professor in charge**, *Aalto University*, Department of Computer Science, Software Systems and Technologies study track, CCIS master program

2019 – 2023 **Member of the Aalto SCI Teaching Evaluation Committee**, *Aalto University*, School of Science

Since 2019 **Deputy member**, *Aalto University*, School of Science, Master program in Computer, Communication and Information Sciences (CCIS)

Since 2014 **Selection committee member**, *Aalto University*, Department of Computer Science, NordSecMob, SECCLO, and Mobile Computing master programs

Pedagogical training

June 2018 **Multicultural Competence for Teachers at Aalto (5 cr)**, *Aalto University*, Communication, teaching and learning in a multicultural environment

February 2015 **Aalto University Pedagogical Learning Program I (25 cr)**, *Aalto University*, study module in higher education pedagogy

- A! Peda Intro (5 cr)
- Teaching at Aalto University I: Learning and teaching in higher education (5 cr)
- Teaching at Aalto University II: Course design (5 cr)
- Active learning and guidance of learning (5 cr)
- Teaching practice (5 cr)

Student supervision

Since 2012 **Aalto University**, *Department of Computer Science*, School of Science

- Currently supervising 1 Ph.D. and 2 M.Sc. students
- 6 Ph.D., 62 M.Sc. and 11 B.Sc. students graduated since 2013

2009 – 2011 **The University of Texas at Arlington**, *Department of Computer Science and Engineering*, advisor of graduate and undergraduate students

2006 – 2009 **University of Pisa**, *Department of Information Engineering*, advisor of graduate students enrolled in the master program in Computer Engineering

Other merits

- Leader of two projects funded by the Aalto Online Learning initiative: CloudScape, addressing scalable and personalized teaching in cloud computing through ICT; and OnPit, targeting the development of an online platform for interactive labs / tutorials
- Contributor for the global edition of the book "Computer Networking: A Top Down Approach", 7th edition, by James Kurose and Keith Ross
- Member of the Aalto Scientists in Schools Program, visited several schools in the Helsinki region to teach computer science (Mankkaan koulu, October 2022; Ressun peruskoulu, February 2017)

Awards, honors and other achievements

- Italian habilitation as full professor in the fields of Computer Science (01/B1) and Computing Systems (09/H1)
- **Computer Science teacher of the year 2020**, Aalto University, Department of Computer Science
- **Honorable mention** for the article "Distance-Dependent Barcodes for Context-Aware Mobile Applications," published in the 22nd International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI 2020)
- **Best student paper award** for the article "Efficient Placement of Edge Computing Devices for Vehicular Applications in Smart Cities," published in the 16th IEEE / IFIP Network Operations and Management Symposium (NOMS 2018)
- **SCI teaching award 2017**, Aalto University School of Science
- Google Cloud Platform Education Grants for several courses, including CS-E4190 Cloud Software and Systems and CS-E4100 Mobile Cloud Computing (since 2017)
- Intel OpenFog University Program in-kind donation (June 2017)
- Google Internet of Things Technology Research Award 2016
- **Best paper award** for the article "Secure and Low-Power Authentication for Resource-Constrained Devices," published in the 5th International Conference on the Internet of Things (IoT 2015)
- **Best paper award** (top 1% of submissions) for the article "Secure Bootstrapping of Cloud-Managed Ubiquitous Displays," published in the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014)
- **Top cited author** for the article "Energy conservation in wireless sensor networks: A survey," published in the Ad Hoc Networks Journal, 7(3):537–568, May 2009 (according to Scopus citations in 2005 – 2010)
- Ph.D. scholarship by the Italian Ministry for Education and Research

- Panelist for review of research projects at the US National Science Foundation
- Selected for the US National Science Foundation workshop on *Pervasive Computing at Scale*

Professional activities and collaborations

Institutional service

2018 – 2026 **Tenure-track committee member**, *Aalto University*, Dept. of Computer Science

- Associate professor promotion committee
- Assistant professor promotion committee (chair in 2023)
- Assistant professor hiring committee (vice chair in 2019–2020, chair in 2020–2021)
- Ad-hoc committees for inter-departmental associate and assistant professor hiring

2022 – 2023 **Expert evaluator for title of docent**, *University of Helsinki*, CS Department

Reviewer of PhD dissertations

Opponent Aleksandr Zavodovski (University of Helsinki, Finland, October 2020) ▪ Muhammad Ikram Ashraf (Oulu University, Finland, December 2019) ▪ Tuan Nguyen Gia (University of Turku, Finland, December 2018)

External evaluator Francesco D'Addario (Sapienza University of Rome, Italy, September 2023) ▪ Tong Li (University of Helsinki, Finland, July 2021)

Editorial board and organizing committee membership

Associate editor Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies

Area editor Elsevier Pervasive and Mobile Computing (2024 – 2019)

Guest editor Special issue on Networking Challenges and Opportunities for Multi-user XR and the Metaverse, IEEE Network magazine ▪ Special issue on the Internet of Things, the Pervasive and Mobile Computing journal

Workshop chair IEEE IoT-SoS 2014

PhD forum chair SMARTCOMP 2018

Session chair IEEE WoWMoM 2016 ▪ CISS 2016 ▪ IEEE iThings 2014 ▪ ACM SIGCOMM MCC 2012 ▪ Q2SWinet 2012

TPC member ACM WWW 2026 ▪ IEEE PerCom (2024, 2022 – 2018, 2016 – 2014, 2010) ▪ IEEE ICDCS (2023, 2021, 2013, 2012) ▪ IEEE MetaCom (2024 – 2023) ▪ ACM SIGCOMM posters and demos (2022) ▪ IEEE WoWMoM (2022 – 2012) ▪ IEEE SMARTCOMP (2018 – 2016, 2014) ▪ ACM NANOCOM (2017 – 2015) ▪ IEEE GLOBECOM (2017, 2011) ▪ IEEE CCNC 2014 ▪ MobiSPC 2014 ▪ IEEE ICON (2013 – 2011) ▪ IEEE / IFIP EUC (2013, 2012, 2010) ▪ ACM MCC 2013 ▪ IEEE LCN 2013

Publication chair IEEE SMARTCOMP 2016 ▪ IEEE WoWMoM 2006

Publicity chair IEEE PerCom 2014 ▪ ICDCN 2013 ▪ MSN 2010 ▪ IEEE PerSeNS (2008 – 2007) IEEE WoWMoM 2008 ▪ IEEE MDC 2006

Reviewer

Journals IEEE / ACM Transactions on Networking ▪ Proc. of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies ▪ ACM Transactions on Computer Systems ACM Transactions on Sensor Networks ▪ ACM Computing Surveys ▪ IEEE Transactions on Computers ▪ IEEE Transactions on Mobile Computing ▪ IEEE Transactions

on Vehicular Technology ▪ IEEE Transactions on Instrumentation and Measurement IEEE Transactions on Parallel and Distributed Systems ▪ IEEE Journal on Selected Areas in Communications ▪ IEEE Journal on the Internet of Things ▪ IEEE Journal on Parallel and Distributed Systems ▪ IEEE Communications Magazine ▪ IEEE Communications Letters ▪ Elsevier Pervasive and Mobile Computing ▪ Elsevier Computer Networks ▪ Elsevier Performance Evaluation ▪ Elsevier Computer Communications Springer Wireless Networks

Conferences ACM CHI 2024 ▪ ACM SIGCSE TS 2021 ▪ ACM ITiCSE (2020, 2019) ▪ UbiComp 2015 ▪ IFIP Networking 2014 ▪ IEEE DCOSS 2012 ▪ IEEE PerCom 2011 ▪ IEEE MASS 2009 ▪ IEEE INFOCOM 2009 ▪ IEEE PerCom (2009 – 2008) ▪ IEEE ISSNIP 2008 ▪ IEEE MASS 2008 ▪ IEEE ISCC 2008 ▪ IFIP UIC (2006 – 2007) ▪ ICST BodyNets 2007

National and international cooperation

Academia Duke University (Maria Gorlatova) ▪ Carnegie Mellon University (Carlee Joe-Wong) Purdue University (Mung Chiang) ▪ Technion (Ori Rottenstreich) ▪ Missouri University of Science and Technology (Sajal K. Das) ▪ Rochester Institute of Technology (Mohan Kumar) ▪ The University of Texas at Arlington (Qilian Liang) ▪ Virginia Commonwealth University (Preetam Ghosh) ▪ Washington State University (Diane Cook) ▪ Politecnico of Milan (Cesare Alippi) ▪ University of Pisa (Giuseppe Anastasi) ▪ Italian National Research Council (Marco Conti) ▪ University of Perugia (Cristina M. Pinotti) ▪ The Hong Kong Polytechnic University (Jiannong Cao) Chinese Academy of Science (Chengwen Luo) ▪ Beihang University (Jianwei Niu) BITS Pilani (Chittaranjan Hota) ▪ University of Helsinki (Jussi Kangasharju)

Industry IBM Watson Health (Yu Gu) ▪ Nokia Research Center, Beijing (Canfeng Chen) Ericsson Research Finland (Oscar Novo, Mohit Sethi) ▪ Smart Sign Solutions (Maria Lijding)

Publications

Bibliometrics H-index: **35**, total citations: **10,304**

Journals

J34 J. Bufalino, J. L. Martin-Navarro, M. Di Francesco, and T. Aura. “Inside Job: Defending Kubernetes Clusters Against Network Misconfigurations”. In: *Proceedings of the ACM on Networking* 3.CoNEXT3 (Sept. 2025).

J33 M. Amidzadeh and M. Di Francesco. “FB-MOAC: A Reinforcement Learning Algorithm for Forward-Backward Markov Decision Processes”. In: *Transactions on Machine Learning Research* (July 2025).

J32 J. J. Limbago, R. Welsch, F. Müller, and M. Di Francesco. “Don’t They Really Hear Us? A Design Space for Private Conversations in Social Virtual Reality”. In: *IEEE Transactions on Visualization and Computer Graphics* 31.5 (Mar. 2025), pp. 3056–3066. **Impact factor: 6.5**.

The most important publications are indicated through a framed label and a star (★). Bibliometric data retrieved from Google Scholar. Impact factors are reported according to Clarivate Analytics Journal Citation Reports (2024 edition). The authors of papers published until the beginning of 2011 follow the **alphabetical order**, according to an accepted custom at the University of Pisa.

J31 V. Toro Betancur, G. Premsankar, C.-F. Liu, M. Słabicki, M. Bennis, and M. Di Francesco. "Learning How to Configure LoRa Networks with No Regret: a Distributed Approach". In: *IEEE Transactions on Industrial Informatics* 19.4 (Apr. 2023), pp. 5633–5644. **Impact factor: 9.9**.

J30 T. Mohammed, S.-A. Naas, S. Sigg, and M. Di Francesco. "Knowledge Sharing in AI Services: A Market-based Approach". In: *IEEE Internet of Things Journal* 10.2 (Jan. 2023), pp. 1320–1331. **Impact factor: 8.9**.

J29 Y. Xu, T. Mohammed, M. Di Francesco, and C. Fischione. "Distributed Assignment with Load Balancing for DNN Inference at the Edge". In: *IEEE Internet of Things Journal* 10.2 (Jan. 2023), pp. 1053–1065. **Impact factor: 8.9**.

J28 T. Mohammed, B. Jedari, and M. Di Francesco. "Efficient and Fair Multi-Resource Allocation in Dynamic Fog Radio Access Network Slicing". In: *IEEE Internet of Things Journal* 9.24 (Dec. 2022), pp. 24600–24614. **Impact factor: 8.9**.

★ J27 Y. Zhang, T. Scargill, A. Vaishnav, G. Premsankar, M. Di Francesco, and M. Gorlatova. "InDepth: Real-time Depth Inpainting for Mobile Augmented Reality". In: *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 6.1 (Mar. 2022), pp. 1–25. **Impact factor: 4.5**.

J26 M. L. Montoya Freire, A. Oulasvirta, and M. Di Francesco. "Inverse Foraging: Inferring Users' Interest in Pervasive Displays". In: *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 5.3 (Sept. 2021), pp. 1–18. **Impact factor: 4.5**.

J25 G. Premsankar, G. Piao, P. Nicholson, M. Di Francesco, and D. Lugones. "Data-driven Energy Conservation in Cellular Networks: A Systems Approach". In: *IEEE Transactions on Network and Service Management* 18.3 (Sept. 2021), pp. 3567–3582. **Impact factor: 5.4**.

J24 B. Jedari, G. Premsankar, G. Illahi, M. Di Francesco, A. Mehrabi, and A. Ylä-Jääski. "Video Caching, Analytics and Delivery at the Wireless Edge: A Survey and Future Directions". In: *IEEE Communications Surveys and Tutorials* 23.1 (First quarter 2020), pp. 431–471. **Impact factor: 46.7**.

J23 G. Premsankar, B. Ghaddar, M. Słabicki, and M. Di Francesco. "Optimal Configuration of LoRa Networks in Smart Cities". In: *IEEE Transactions on Industrial Informatics* 16.12 (Dec. 2020), pp. 7243–7254. **Impact factor: 9.9**.

J22 O. Novo and M. Di Francesco. "Semantic Interoperability in the IoT: Extending the Web of Things Architecture". In: *ACM Transactions on Internet of Things* 1.1 (Mar. 2020). **Impact factor: 3.7**.

J21 T. H. Nguyen, M. Di Francesco, and A. Ylä-Jääski. "Virtual Machine Consolidation with Multiple Usage Prediction for Energy-Efficient Cloud Data Centers". In: *IEEE Transactions on Services Computing* 13.1 (Jan. 2020), pp. 186–199. **Impact factor: 5.8**.

J20 M. L. Montoya Freire, D. Potts, N. Dayama, A. Oulasvirta, and M. Di Francesco. "Foraging-based Optimization of Pervasive Displays". In: *Pervasive and Mobile Computing* 55 (Apr. 2019), pp. 45–58. **Impact factor: 3.5**.

J19 G. Premsankar, M. Di Francesco, and T. Taleb. “Edge Computing for the Internet of Things: A Case Study”. In: *IEEE Internet of Things Journal* 5.2 (Apr. 2018), pp. 1275–1284. **Impact factor: 8.9**.

★ J18 O. Rottenstreich, M. Di Francesco, and Y. Revah. “Perfectly Periodic Scheduling of Collective Data Streams”. In: *IEEE/ACM Transactions on Networking* 25.3 (June 2017), pp. 1332–1346. **Impact factor: 3.6**.

J17 L. Cheng, J. Niu, M. Di Francesco, S. K. Das, C. Luo, and Y. Gu. “Seamless Streaming Data Delivery in Cluster-based Wireless Sensor Networks with Mobile Elements”. In: *IEEE Systems Journal* 10.2 (June 2016), pp. 805–816. **Impact factor: 4.4**.

J16 Y. Lin, T. Kämäräinen, M. Di Francesco, and A. Ylä-Jääski. “Performance Evaluation of Remote Display Access for Mobile Cloud Computing”. In: *Computer Communications* 72 (Dec. 2015), pp. 17–25. **Impact factor: 4.3**.

★ J15 K. A. Imon, A. Khan, M. Di Francesco, and S. K. Das. “Energy-Efficient Randomized Switching for Maximizing Lifetime in Tree-based Wireless Sensor Networks”. In: *IEEE/ACM Transactions on Networking* 23.5 (Oct. 2015), pp. 1401–1415. **Impact factor: 3.6**.

J14 A. Navarra, C. M. Pinotti, M. Di Francesco, and S. K. Das. “Interference-free Scheduling with Minimum Latency in Cluster-based Wireless Sensor Networks”. In: *Wireless Networks* 21.7 (Oct. 2015), pp. 2395–2411. **Impact factor: 2.1**.

J13 A. Nazi, M. Raj, M. Di Francesco, P. Ghosh, and S. K. Das. “Deployment of Robust Wireless Sensor Networks Using Gene Regulatory Networks: an Isomorphism-based Approach”. In: *Pervasive and Mobile Computing* 13 (Aug. 2014), pp. 246–257. **Impact factor: 3.5**.

J12 G. Pallapa, S. K. Das, M. Di Francesco, and T. Aura. “Adaptive and Context-Aware Privacy Preservation Exploiting User Interactions in Pervasive Environments”. In: *Pervasive and Mobile Computing* 12 (June 2014), pp. 232–243. **Impact factor: 3.5**.

J11 K. Shah, M. Di Francesco, and M. Kumar. “Distributed Resource Management in Wireless Sensor Networks Using Reinforcement Learning”. In: *Wireless Networks* 19.5 (July 2013), pp. 705–724. **Impact factor: 2.1**.

J10 K. Shah, M. Di Francesco, G. Anastasi, and M. Kumar. “A Framework for Resource-Aware Data Accumulation in Sparse Wireless Sensor Networks”. In: *Computer Communications* 34.17 (Nov. 2011), pp. 2094–2103. **Impact factor: 4.3**.

★ J9 M. Di Francesco, G. Anastasi, M. Conti, S. K. Das, and V. Neri. “Reliability and Energy-efficiency in IEEE 802.15.4/ZigBee Sensor Networks: An Adaptive and Cross-layer Approach”. In: *IEEE Journal on Selected Areas in Communications* 29.8 (Sept. 2011), pp. 1508–1524. **Impact factor: 17.2**.

J8 M. Di Francesco, S. K. Das, and G. Anastasi. “Data Collection in Wireless Sensor Networks with Mobile Elements: A Survey”. In: *ACM Transactions on Sensor Networks* 8.1 (Aug. 2011). **Impact factor: 4.7**.

J7 G. Anastasi, M. Conti, and M. Di Francesco. “A Comprehensive Analysis of the MAC Unreliability Problem in IEEE 802.15.4 Wireless Sensor Networks”. In: *IEEE Transactions on Industrial Informatics* 7.1 (Feb. 2011), pp. 52–65. **Impact factor: 9.9**.

J6 C. Alippi, G. Anastasi, M. Di Francesco, and M. Roveri. "An Adaptive Sampling Algorithm for Effective Energy Management in Wireless Sensor Networks with Energy-hungry Sensors". In: *IEEE Transactions on Instrumentation and Measurement* 59.2 (Feb. 2010), pp. 335–344. **Impact factor: 5.9**.

J5 G. Anastasi, M. Conti, and M. Di Francesco. "Reliable and Energy-efficient Data Collection in Sparse Sensor Networks with Mobile Elements". In: *Performance Evaluation* 66.12 (Special issue on "Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks" Dec. 2009), pp. 791–810. **Impact factor: 0.8**.

J4 G. Anastasi, M. Conti, and M. Di Francesco. "Extending the Lifetime of Wireless Sensor Networks through Adaptive Sleep". In: *IEEE Transactions on Industrial Informatics* 5.3 (Aug. 2009), pp. 351–365. **Impact factor: 9.9**.

J3 G. Anastasi, M. Conti, M. Di Francesco, and A. Passarella. "Energy conservation in wireless sensor networks: A survey". In: *Ad Hoc Networks* 7.3 (May 2009), pp. 537–568. **Impact factor: 4.8**.

J2 C. Alippi, G. Anastasi, M. Di Francesco, and M. Roveri. "Energy Management in Wireless Sensor Networks with Energy-hungry Sensors". In: *IEEE Instrumentation and Measurements Magazine* 12.2 (Apr. 2009), pp. 16–23. **Impact factor: 1.6**.

J1 G. Anastasi, M. Conti, M. Di Francesco, E. Gregori, and A. Passarella. "Energy Management in Sensor Networks for Environmental Monitoring". In: *Environmental Semeiotics Journal* 1.1 (Feb. 2008), pp. 20–41.

Conferences

C58 M. Amidzadeh, L. Viitasaari, and M. Di Francesco. "Non-Parametric Optimization for Scalable Learning in Stochastic Decision Problems". In: *The 43rd International Conference on Machine Learning (ICML 2026)*. July 2026.

C57 V. Toro Betancur, G. Premsankar, L. Corneo, and M. Di Francesco. "Timely Data Delivery for Heterogeneous IoT Applications". In: *The 23rd International Symposium on Modeling and Optimization in Mobile, Ad hoc, and Wireless Networks (WiOpt 2025)*. May 2025.

C56 L. Corneo and M. Di Francesco. "From WHOIS to RDAP: Are IP Lookup Services Getting Any Better?" In: *The 21st IEEE/IFIP Network Operations and Management Symposium (NOMS 2024)*. May 2024.

C55 R. K. Putra, L. Corneo, W. Wong, and M. Di Francesco. "CLAIM: A Cloud-based Framework for Internet-scale Measurements ". In: *The 21st IEEE/IFIP Network Operations and Management Symposium (NOMS 2024)*. May 2024.

★ C54 J. Bufalino, M. Di Francesco, and T. Aura. "Analyzing Network Connectivity between Microservices with Kubesonde". In: *The 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023)*. Sept. 2023, pp. 2038–2043.

C53 G. K. Illahi, A. Vaishnav, T. Kämäräinen, M. Siekkinen, and M. Di Francesco. "Learning to Predict Head Pose in Remotely-Rendered Virtual Reality". In: *The 14th ACM Multimedia Systems Conference (MMSys 2023)*. June 2023, pp. 27–38.

C52 P. Kortoçi, A. Mehrabi, C. Joe-Wong, and M. Di Francesco. "Incentivizing Opportunistic Data Collection for Time-Sensitive IoT Applications". In: *The 18th IEEE International Conference on Sensing, Communication and Networking (SECON 2021)*. July 2021.

★ C51 V. Toro Betancur, G. Premsankar, M. Słabicki, and M. Di Francesco. "Modeling Communication Reliability in LoRa Networks with Device-level Accuracy". In: *The 40th IEEE International Conference on Computer Communications (INFOCOM 2021)*. May 2021. **Acceptance rate: 19.9%**.

C50 R. Palomäki, M. L. Montoya Freire, and M. Di Francesco. "Distance-dependent Barcodes for Context-aware Mobile Applications". In: *The 22nd International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI 2020)*. **Honorable mention**. Oct. 2020.

C49 J. Bufalino, M. L. Montoya Freire, J. Kannala, and M. Di Francesco. "MAMBA: Adaptive and Bi-directional Data Transfer for Reliable Camera-display Communications". In: *The 21st International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2020)*. Aug. 2020, pp. 307–316.

C48 V. Toro Betancur, S. Bayhan, P. Gawłowicz, and M. Di Francesco. "CTC-CEM: Low-Latency Cross-Technology Channel Establishment with Multiple Nodes". In: *The 21st International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2020)*. Aug. 2020, pp. 117–126.

★ C47 T. Mohammed, C. Joe-Wong, R. Babbar, and M. Di Francesco. "Distributed Inference Acceleration with Adaptive DNN Partitioning and Offloading". In: *The 39th IEEE International Conference on Computer Communications (INFOCOM 2020)*. July 2020, pp. 854–863. **Acceptance rate: 19.8%**.

C46 D. Bruzual, M. L. Montoya Freire, and M. Di Francesco. "Automated Assessment of Android Exercises with Cloud-native Technologies". In: *The 25th Innovation and Technology in Computer Science Education (ITiCSE 2020)*. June 2020, pp. 40–46.

C45 V. Toro Betancur, J. Viquez Zamora, M. Antikainen, and M. Di Francesco. "A Scalable Software Update Service for IoT Devices in Urban Scenarios". In: *The 9th International Conference on the Internet of Things (IoT 2019)*. Oct. 2019, 9:1–9:8.

C44 F. Mezghani, P. Kortoçi, N. Mitton, and M. Di Francesco. "A Multi-tier Communication Scheme for Drone-assisted Disaster Recovery Scenarios". In: *The 30th International Symposium on Personal, Indoor, Mobile and Radio Communications (PIMRC 2019)*. Sept. 2019, pp. 240–246.

★ C43 B. Jedari and M. Di Francesco. "Auction-based Cache Trading for Layered Videos in Multi-Provider Heterogeneous Networks". In: *The 38th IEEE International Conference on Computer Communications (INFOCOM 2019)*. May 2019, pp. 1864–1872. **Acceptance rate: 19.7%**.

★ C42 P. Kortoçi, L. Zheng, C. Joe-Wong, M. Di Francesco, and M. Chiang. "Fog-based Data Offloading in Urban IoT Scenarios". In: *The 38th IEEE International Conference on Computer Communications (INFOCOM 2019)*. May 2019, pp. 784–792. **Acceptance rate: 19.7%**.

C41 B. Jedari and M. Di Francesco. “Delay Analysis of Layered Video Caching in Crowdsourced Heterogeneous Wireless Networks”. In: *The 2018 Global Communications Conference (GLOBECOM 2018)*. Dec. 2018.

C40 S. K. Mohanty, G. Premsankar, and M. Di Francesco. “An Evaluation of Open Source Serverless Computing Frameworks”. In: *The 10th IEEE International Conference on Cloud Computing Technology and Science (CloudCom ‘18)*. Dec. 2018, pp. 115–120.

C39 G. Premsankar, B. Ghaddar, M. Di Francesco, and R. Verago. “Efficient Placement of Edge Computing Devices for Vehicular Applications in Smart Cities”. In: *The 16th IEEE/IFIP Network Operations and Management Symposium (NOMS 2018)*. **Best student paper award**. Apr. 2018.

C38 M. Słabicki, G. Premsankar, and M. Di Francesco. “Adaptive Configuration of LoRa Networks for Dense IoT Deployments”. In: *The 16th IEEE/IFIP Network Operations and Management Symposium (NOMS 2018)*. Apr. 2018.

C37 S. Bayhan, L. Zheng, J. Chen, M. Di Francesco, J. Kangasharju, and M. Chiang. “Improving Cellular Capacity with White Space Offloading”. In: *The 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt 2017)*. May 2017.

C36 M. L. Montoya Freire and M. Di Francesco. “Reliable and Bidirectional Camera-Based Communications with Smartphones”. In: *The 17th International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2016)*. June 2016, pp. 1–7.

C35 M. L. Montoya Freire, V. P. Tatiraju, M. Sethi, and M. Di Francesco. “Replication of Web-based Pervasive Display Applications”. In: *The 5th ACM International Symposium on Pervasive Displays (PerDis 2016)*. June 2016, pp. 204–211.

C34 S. Bayhan, G. Premsankar, M. Di Francesco, and J. Kangasharju. “Mobile Content Offloading in Database-Assisted White Space Networks”. In: *The 11th EAI International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2016)*. May 2016, pp. 129–141.

C33 A. Nazi, M. Raj, M. Di Francesco, P. Ghosh, and S. K. Das. “Efficient Communications in Wireless Sensor Networks Based on Biological Robustness”. In: *The 12th International Conference on Distributed Computing in Sensor Systems (DCOSS 2016)*. May 2016, pp. 161–168.

C32 A. Nazi, M. Raj, M. Di Francesco, P. Ghosh, and S. K. Das. “Exploiting Gene Regulatory Networks for Robust Wireless Sensor Networking”. In: *The 2015 Global Communications Conference (GLOBECOM 2015)*. Dec. 2015, pp. 1–7.

C31 M. Sethi, P. Kortoçi, M. Di Francesco, and T. Aura. “Secure and Low-Power Authentication for Resource-Constrained Devices”. In: *The 5th International Conference on the Internet of Things (IoT 2015)*. **Best paper award**. Oct. 2015, pp. 30–36.

C30 M. Sethi, M. Lijding, M. Di Francesco, and T. Aura. “Flexible Management of Cloud-Connected Digital Signage”. In: *The 12th International Conference on Ubiquitous Intelligence and Computing (UIC 2015)*. Aug. 2015.

C29 T. H. Nguyen, M. Di Francesco, and A. Ylä-Jääski. "Virtual Machine Consolidation with Usage Prediction for Energy-Efficient Cloud Data Centers". In: *The 8th IEEE International Conference on Cloud Computing (CLOUD 2015)*. July 2015, pp. 750–757.

C28 T. H. Nguyen, M. Di Francesco, and A. Ylä-Jääski. "A Multi-Resource Selection Scheme for Virtual Machine Consolidation in Cloud Data Centers". In: *The 6th IEEE International Conference on Cloud Computing Technology and Science (CloudCom '14)*. Dec. 2014, pp. 234–239.

C27 T. A. M. Phan, J. K. Nurminen, and M. Di Francesco. "Cloud Databases for Internet-of-Things Data". In: *The 2014 IEEE International Conference on Internet of Things (iThings 2014)*. Sept. 2014, pp. 117–124.

★ C26 M. Sethi, E. Oat, M. Di Francesco, and T. Aura. "Secure Bootstrapping of Cloud-Managed Ubiquitous Displays". In: *The 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014)*. **Best paper award**. Sept. 2014, pp. 739–750.

C25 T. H. Nguyen, M. Di Francesco, and A. Ylä-Jääski. "A Virtual Machine Placement Algorithm for Balanced Resource Utilization in Cloud Data Centers". In: *The 7th IEEE International Conference on Cloud Computing (CLOUD 2014)*. June 2014, pp. 474–481.

C24 E. Oat, M. Di Francesco, and T. Aura. "MoCHA: Augmenting Pervasive Displays through Mobile Devices and Web-based Technologies". In: *The 1st IEEE Workshop on Developing Applications for Pervasive Display Networks (PD-Apps '14)*. Mar. 2014, pp. 506–511.

C23 T. H. Nguyen, M. Di Francesco, and A. Ylä-Jääski. "Extracting Knowledge from Wikipedia Articles through Distributed Semantic Analysis". In: *The 13th International Conference on Knowledge Management and Knowledge Computing (i-KNOW 2013)*. Sept. 2013.

C22 C. Hota, V. Nunia, M. Di Francesco, J. K. Nurminen, and A. Ylä-Jääski. "Enhanced Search in Unstructured Peer-to-Peer Overlay Networks". In: *The 8th International Conference on Grid and Pervasive Computing (GPC 2013)*. May 2013, pp. 270–279.

C21 K. A. Imon, A. Khan, M. Di Francesco, and S. K. Das. "RaSMaLai: A Randomized Switching Algorithm for Maximizing Lifetime in Tree-based Wireless Sensor Networks". In: *The 32nd IEEE International Conference on Computer Communications (INFOCOM 2013)*. Apr. 2013, pp. 2913–2921. **Acceptance rate: 17.4%**.

C20 A. Khan, M. Shahriar, K. A. Imon, M. Di Francesco, and S. K. Das. "PeerVault: A Distributed Peer-to-Peer Platform for Reliable Data Backup". In: *The 14th International Conference on Distributed Computing and Networking (ICDCN 2013)*. Jan. 2013, pp. 315–329.

C19 A. Nazi, M. Raj, M. Di Francesco, P. Ghosh, and S. K. Das. "Robust Deployment of Wireless Sensor Networks Using Gene Regulatory Networks". In: *The 14th International Conference on Distributed Computing and Networking (ICDCN 2013)*. Jan. 2013, pp. 192–207.

C18 M. Di Francesco, M. Raj, N. Li, and S. K. Das. "A Storage Infrastructure for Heterogeneous and Multimedia Data in the Internet of Things". In: *The 2012 IEEE International Conference on Internet of Things (iThings 2012)*. Nov. 2012, pp. 26–33.

C17 Y. Lin and M. Di Francesco. "Energy Consumption of Remote Desktop Access on Mobile Devices: An Experimental Study". In: *The 1st IEEE International Conference on Cloud Networking (CloudNet 2012)*. Nov. 2012, pp. 105–110.

C16 M. Di Francesco, C. M. Pinotti, and S. K. Das. "Interference-free Scheduling with Bounded Delay in Cluster-Tree Wireless Sensor Networks". In: *The 15th International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWIM 2012)*. Oct. 2012, pp. 99–106.

C15 R. Fakoor, M. Raj, A. Nazi, M. Di Francesco, and S. K. Das. "An Integrated Cloud-based Framework for Mobile Phone Sensing". In: *The 1st SIGCOMM Workshop on Mobile Cloud Computing (MCC 2012)*. Aug. 2012, pp. 47–52.

C14 G. Pallapa, M. Di Francesco, and S. K. Das. "Adaptive and Context-Aware Privacy Preservation Schemes Exploiting User Interactions in Pervasive Environments". In: *The 3rd IEEE International Workshop on Data Security and Privacy in Wireless Networks (D-SPAN 2012)*. June 2012, pp. 1–6.

C13 G. Anastasi, E. Borgia, M. Conti, and M. Di Francesco. "Reliable Data Delivery in sparse WSNs with Multiple Mobile Sinks: an Experimental Analysis". In: *The 16th IEEE Symposium on Computers and Communications (ISCC 2011)*. June 2011, pp. 698–705.

C12 L. Cheng, S. K. Das, M. Di Francesco, C. Chen, and J. Ma. "Scalable and Energy-Efficient Broadcasting in Multihop Cluster-Based Wireless Sensor Networks". In: *The 2011 IEEE International Conference on Communications (ICC 2011)*. June 2011.

C11 L. Cheng, S. K. Das, M. Di Francesco, C. Chen, J. Ma, and D. Xie. "Streaming Data Dissemination in Multi-hop Cluster-based Wireless Sensor Networks with Mobile Sinks". In: *The 12th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2011)*. June 2011, pp. 1–9. **Acceptance rate: 22.5%**.

C10 M. Di Francesco, N. Li, L. Cheng, M. Raj, and S. K. Das. "A Framework for Multimodal Sensing in Heterogeneous and Multimedia Wireless Sensor Networks". In: *The 12th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2011)*. June 2011, pp. 1–3.

C9 G. Anastasi, M. Conti, M. Di Francesco, and V. Neri. "Reliability and Energy Efficiency in Multi-hop IEEE 802.15.4/ZigBee Wireless Sensor Networks". In: *The 15th IEEE Symposium on Computers and Communications (ISCC 2010)*. June 2010, pp. 336–341.

C8 M. Di Francesco, G. Anastasi, M. Conti, S. K. Das, and V. Neri. "An Adaptive Algorithm for Dynamic Tuning of MAC Parameters in IEEE 802.15.4/ZigBee Sensor Networks". In: *The 6th IEEE International Workshop on Sensor Networks and Systems for Pervasive Computing (PerSeNS 2010)*. Mar. 2010, pp. 400–405.

C7 M. Di Francesco, K. Shah, M. Kumar, and G. Anastasi. "An Adaptive Strategy for Energy-efficient Data Collection in Sparse Wireless Sensor Networks". In: *The 7th European Conference on Wireless Sensor Networks (EWSN 2010)*. Feb. 2010, pp. 322–337. **Acceptance rate: 19.3%**.

C6 G. Anastasi, M. Conti, and M. Di Francesco. "The MAC Unreliability Problem in IEEE 802.15.4 Wireless Sensor Networks". In: *The 12th ACM-IEEE International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWIM 2009)*. Oct. 2009, pp. 196–203. **Acceptance rate: 23.6%**.

C5 G. Anastasi, M. Conti, and M. Di Francesco. "An Analytical Study of Reliable and Energy-efficient Data Collection in Sparse Sensor Networks with Mobile Elements". In: *The 6th European Conference on Wireless Sensor Networks (EWSN 2009)*. Feb. 2009, pp. 199–215. **Acceptance rate: 15.9%**.

C4 G. Anastasi, M. Conti, and M. Di Francesco. "Data Collection in Sensor Networks with Data Mules: an Integrated Simulation Analysis". In: *The 13th IEEE Symposium on Computers and Communications (ISCC 2008)*. July 2008, pp. 1096–1102.

C3 G. Anastasi, M. Castronuovo, M. Conti, and M. Di Francesco. "Experimental Evaluation of An Adaptive Staggered Sleep Protocol for Wireless Sensor Networks". In: *The 3rd IEEE Workshop on advanced EXPerimental activities ON WIRELESS networks & systems (EXPONWIRELESS08)*. June 2008, pp. 1–6.

C2 G. Anastasi, M. Conti, M. Di Francesco, and A. Passarella. "An Adaptive and Low-latency Power Management Protocol for Wireless Sensor Networks". In: *The 4th ACM International Workshop on Mobility Management and Wireless Access (MobiWac 2006)*. Oct. 2006, pp. 67–74.

C1 G. Anastasi, S. Croce, M. Di Francesco, F. Marcelloni, E. Monaldi, and A. Vecchio. "Energy Management in Sensor Networks for Environmental Monitoring". In: *The XIII International Road Weather Conference (SIRWEC 2006)*. Mar. 2006.

Book chapters

B3 G. Premsankar and M. Di Francesco. "Advances in Cloud Computing, Wireless Communications and the Internet of Things". In: *Control and Optimization Analytics for the Sharing Economy*. Mar. 2020, pp. 71–94.

B2 G. Anastasi, M. Conti, M. Di Francesco, and I. Giannetti. "Design, Implementation, and Field Experimentation of a Long-lived Multi-hop Sensor Network for Vineyard Monitoring". In: *Methodologies and Technologies for Networked Enterprises*. Vol. 7200. July 2012, pp. 311–327.

B1 M. Raj, M. Di Francesco, and S. K. Das. "Secure Mobile Cloud Computing". In: *Handbook on Securing Cyber-Physical Critical Infrastructure*. Feb. 2012, pp. 411–429.

Theses

T2 M. Di Francesco. "Adaptive Strategies for Energy Conservation in Wireless Sensor Networks". PhD thesis. University of Pisa, 2009.

T1 M. Di Francesco. "Progetto e Valutazione di un Protocollo di Power Management per Reti di Sensori". Master's thesis. University of Pisa, 2005.

Technical reports

R4 K. A. Imon, A. Khan, M. Di Francesco, and S. K. Das. *Analysis of RaSMaLai: A Randomized Switching Algorithm for Maximizing Lifetime in Tree-based Wireless Sensor Networks*. Tech. rep. CReWMaN-2012-7. University of Texas at Arlington, July 2012.

R3 G. Anastasi, E. Borgia, M. Conti, and M. Di Francesco. *Reliable Data Delivery in Sparse WSNs with Multiple Mobile Sinks: an Experimental Analysis*. Tech. rep. 5-2011. Institute of Informatics and Telematics, National Research Council, Apr. 2011.

R2 C. Alippi, G. Anastasi, M. Di Francesco, C. Galperti, F. Mancini, and M. Roveri. *Effective Energy Management in Wireless Sensor Networks through Adaptive Sampling*. Tech. rep. DII-TR-2008-08. University of Pisa, Aug. 2008.

R1 G. Anastasi, M. Conti, and M. Di Francesco. *An Adaptive Sleep Strategy for Energy Conservation in Wireless Sensor Networks*. Tech. rep. DII-TR-2008-07. University of Pisa, Aug. 2008.

Under review

U3 S. Jeon, J. Kim, M. Di Francesco, and H. Cha. "CODI: Collaborative DNN Inference with Smartphones for Intelligent IoT Applications". Submitted to: *Proceedings of the ACM Web Conference 2027 (WWW 2027)*.

U2 S. Jiang, T. Shi, S. Zhang, Z. Wang, M. Di Francesco, and B. Zhao. "Nereus: Cost-Aware Online Adaptation for Multi-Model LLM Post-Training". Submitted to: *The 22nd European Conference on Computer Systems (EuroSys 2027)*.

U1 T. Shi, J. Cai Zhipeng and Wang, B. Zhao, and M. Di Francesco. "Mobility-Aware Classification at the Edge with Aggregation of Tiny Models". Submitted to: *IEEE Transactions on Mobile Computing*.

Accepted

A1 A. Vaishnav, M. Amidzadeh, T. Kämäräinen, M. Siekkinen, and M. Di Francesco. "Filter Banks: from Low-Rank Representations to Deep Models for Efficient Time Series Forecasting". Submitted to: *The 40th Annual Conference on Neural Information Processing Systems (NeurIPS 2026)*.

In preparation

I6 M. Amidzadeh, L. Viitasaari, and M. Di Francesco. "Neural PDE Adjoint: Solving Kolmogorov PDE-Constrained Optimization Problems via a Simulation-based Adjoint Gradient Approach". Submitted to: *N/A*.

I5 M. Amidzadeh, L. Viitasaari, and M. Di Francesco. "Neural SOC: Neural SOC: A Scalable Neural Framework for Stochastic Optimal Control Problems with Long Dynamics". Submitted to: *The 40th Annual Conference on Neural Information Processing Systems (NeurIPS 2026)*.

I4 J. Bufalino, M. Di Francesco, A. Blaise, and S. Secci. "SBOMpliance: The Impact of SBOM Interoperability on Cloud-Native Supply Chain Security". Submitted to: *The ACM Conference on Software Supply Chain Offensive Research and Ecosystem Defenses (SCORED '26)*.

I3 M. L. Montoya Freire, R. Palomäki, and M. Di Francesco. "DNN-based Decoding of Distance-Dependent Barcodes for Mobile and IoT Applications". Submitted to: *IEEE Internet of Things Journal*.

I2 A. Vaishnav, A. Khatri, V. Garg, and M. Di Francesco. "Meta Compression: Learning to Compress Pre-trained Deep Neural Networks". Submitted to: *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*.

I1 S. Zhang, T. Shi, Z. Wang, M. Di Francesco, and B. Zhao. “Conduit: An Experience Data Plane for Distributed Reinforcement Learning”. Submitted to: *The 2026 ACM SIGOPS Annual Technical Conference (ATC 2026)*.