Selected publications

[1] Shinan Liu, Francesco Bronzino, Paul Schmitt, Arjun Nitin Bhagoji, Nick Feamster, Hector Garcia Crespo, Timothy Coyle, and Brian Ward. "LEAF: Navigating Concept Drift in Cellular Networks". In: *Proceedings of the ACM on Networking* (2023).

[2] Francesco Bronzino, Paul Schmitt, Sara Ayoubi, Hyojoon Kim, Renata Teixeira, and Nick Feamster. "Traffic Refinery: Cost-Aware Data Representation for Machine Learning on Network Traffic". In: *Proceedings of the ACM on Measurement and Analysis of Computing Systems* (2021).

[3] Francesco Bronzino, Sumit Maheshwari, Ivan Seskar, and Dipankar Raychaudhuri. "NOVN: A named-object based virtual network architecture to support advanced mobile edge computing services". In: *Elsevier Pervasive and Mobile Computing* (2020).

[4] Francesco Bronzino, Paul Schmitt, Sara Ayoubi, Guilherme Martins, Renata Teixeira, and Nick Feamster. "Inferring Streaming Video Quality from Encrypted Traffic: Practical Models and Deployment Experience". In: *Proceedings of the ACM on Measurement and Analysis of Computing Systems* (2019).

[5] Sumit Maheshwari, Dipankar Raychaudhuri, Ivan Seskar, and Francesco Bronzino. "Scalability and Performance Evaluation of Edge Cloud Systems for Latency Constrained Applications". In: *IEEE/ACM Symposium on Edge Computing (SEC)*. 2018.

Under submission

[1] Sean Flynn, Francesco Bronzino, and Paul Schmitt. "Internet Localization of Multi-Party Relay Users: Inherent Friction Between Internet Services and User Privacy". In: *Under Submission* (2023).

[2] Xi Jiang, Shinan Liu, Aaron Gember-Jacobson, Paul Schmitt, Francesco Bronzino, and Nick Feamster. "Generative, High-Fidelity Network Traces". In: *Under Submission* (2023).

[3] Xi Jiang, Saloua Naama Shinan Liu, Francesco Bronzino, Paul Schmitt, and Nick Feamster. "AC-DC: Adaptive Ensemble Classification for Network Traffic Identification". In: *Under Submission* (2023).

[4] Xi Jiang, Saloua Naama Shinan Liu, Francesco Bronzino, Paul Schmitt, and Nick Feamster. "Traffic Classification on the Shifting Sands of the Internet". In: *Under Submission* (2023).

[5] Naama Saloua, Kavé Salamatian, and Francesco Bronzino. "Ironing the Graphs: Toward a Correct Geometric Analysis of Large-Scale Graphs". In: *Under Submission* (2023).

Journals

[6] Razanne Abu-Aisheh, Francesco Bronzino, Lou Salaün, and Thomas Watteyne. "CARA: Connectivity-Aware Relay Algorithm for Multi-Robot Expeditions". In: *MDPI Sensors* (2022).

[3] Francesco Bronzino, Sumit Maheshwari, Ivan Seskar, and Dipankar Raychaudhuri. "NOVN: A named-object based virtual network architecture to support advanced mobile edge computing services". In: *Elsevier Pervasive and Mobile Computing* (2020).

Conferences

[7] Mathieu Guglielmino, Francesco Bronzino, and Sébastien Monnet. "Outil interactif pour l'alignement de la vue client-opérateur sur les architectures de réseau". In: *CoRes 2023-8èmes Rencontres Francophones sur la Conception de protocoles, l'évaluation de performances et l'expérimentation de Réseaux de communication*. 2023.

[1] Shinan Liu, Francesco Bronzino, Paul Schmitt, Arjun Nitin Bhagoji, Nick Feamster, Hector Garcia Crespo, Timothy Coyle, and Brian Ward. "LEAF: Navigating Concept Drift in Cellular Networks". In: *Proceedings of the ACM on Networking* (2023).

[8] Martino Trevisan, Idilio Drago, Paul Schmitt, and Francesco Bronzino. "Measuring the Performance of iCloud Private Relay". In: *Passive and Active Measurement Conference*. 2023.

[9] Ayoub Ben Ameur, Andrea Araldo, and Francesco Bronzino. "On the deployability of augmented reality using embedded edge devices". In: *IEEE 18th Annual Consumer Communications & Networking Conference*. 2021.

[10] Francesco Bronzino, Nick Feamster, Shinan Liu, James Saxon, and Paul Schmitt. "Mapping the Digital Divide: Before, During, and After COVID-19". In: *48th Research Conference on Communication, Information and Internet Policy* (2021).

[11] Francesco Bronzino, Sumit Maheshwari, Ivan Seskar, and Dipankar Raychaudhuri. "Application-Aware End-to-End Virtualization Using a Named-Object Based Network Architecture". In: *33th International Teletraffic Congress*. 2021.

[2] Francesco Bronzino, Paul Schmitt, Sara Ayoubi, Hyojoon Kim, Renata Teixeira, and Nick Feamster. "Traffic Refinery: Cost-Aware Data Representation for Machine Learning on Network Traffic". In: *Proceedings of the ACM on Measurement and Analysis of Computing Systems* (2021).

[12] Shinan Liu, Paul Schmitt, Francesco Bronzino, and Nick Feamster. "Characterizing Service Provider Response to the COVID-19 Pandemic in the United States". In: *Passive and Active Measurement Conference*. 2021.

[13] Francesco Bronzino, Sumit Maheshwari, Ivan Seskar, and Dipankar Raychaudhuri. "NOVN: named-object based virtual network architecture". In: *Proceedings of the 20th International Conference on Distributed Computing and Networking*. 2019.

[4] Francesco Bronzino, Paul Schmitt, Sara Ayoubi, Guilherme Martins, Renata Teixeira, and Nick Feamster. "Inferring Streaming Video Quality from Encrypted Traffic: Practical Models and Deployment Experience". In: *Proceedings of the ACM on Measurement and Analysis of Computing Systems* (2019).

[14] Ivan Morandi, Francesco Bronzino, Renata Teixeira, and Srikanth Sundaresan. "Service Traceroute: Tracing Paths of Application Flows". In: *Conference on Passive and Active Network Measurement*. 2019.

[5] Sumit Maheshwari, Dipankar Raychaudhuri, Ivan Seskar, and Francesco Bronzino. "Scalability and Performance Evaluation of Edge Cloud Systems for Latency Constrained Applications". In: *IEEE/ACM Symposium on Edge Computing (SEC)*. 2018.

[15] Paul Schmitt, Francesco Bronzino, Renata Teixeira, Tithi Chattopadhyay, and Nick Feamster. "Enhancing Transparency: Internet Video Quality Inference from Network Traffic". In: *46th Research Conference on Communication, Information and Internet Policy*. 2018.

[16] Ö Bulakci, DM Gutierrez-Estevez, M Ericson, A Prasad, E Pateromichelakis, G Calochira, J Belschner, P Arnold, F Sanchez Moya, AM Ibrahim, et al. "An agile resource management framework for 5G". In: *IEEE Conference on Standards for Communications and Networking*. 2017.

[17] Shreyasee Mukherjee, Parishad Karimi, Dipankar Raychaudhuri, and Francesco Bronzino. "Enabling Advanced Network Services in the Future Internet Using Named Object Identifiers and Global Name Resolution". In: *Tenth International Conference on Communication Theory, Reliability, and Quality of Service*. 2017.

[18] Francesco Bronzino, Dipankar Raychaudhuri, and Ivan Seskar. "Demonstrating context-aware services in the mobility first future internet architecture". In: *28th International Teletraffic Congress*. 2016.

[19] Francesco Bronzino, Dragoslav Stojadinovic, Cedric Westphal, and Dipankar Raychaudhuri. "Exploiting network awareness to enhance DASH over wireless". In: *13th IEEE Consumer Communications & Networking Conference*. 2016.

[20] Shreyasee Mukherjee, Francesco Bronzino, Suja Srinivasan, Jiachen Chen, and Dipankar Raychaudhuri. *Achieving Scalable Push Multicast Services Using Global Name Resolution*. 2016.

[21] Francesco Bronzino, Dipankar Raychaudhuri, and Ivan Seskar. "Experiences with testbed evaluation of the mobilityfirst future internet architecture". In: *IEEE European Conference on Networks and Communications*. 2015.

[22] Kai Su, Francesco Bronzino, KK Ramakrishnan, and Dipankar Raychaudhuri. "MFTP: A Clean-Slate Transport Protocol for the Information Centric MobilityFirst Network". In: *2nd International Conference on Information-Centric Networking*. 2015.

[23] Yu-Ting Yu, Francesco Bronzino, Ruolin Fan, Cedric Westphal, and Mario Gerla. "Congestion-aware edge caching for adaptive video streaming in information-centric networks". In: *12th IEEE Consumer Communications and Networking Conference*. 2015.

[24] F. Bronzino, R. Gaeta, M. Grangetto, and G. Pau. "An adaptive hybrid CDN/P2P solution for Content Delivery Networks". In: *IEEE VCIP*. 2012.

Workshops

[25] Xi Jiang, Shinan Liu, Saloua Naama, Francesco Bronzino, Paul Schmitt, and Nick Feamster. "Towards Designing Robust and Efficient Classifiers for Encrypted Traffic in the Modern Internet". In: *IAB workshop on Management Techniques in Encrypted Networks* (2022).

[26] Shinan Liu, Francesco Bronzino, Paul Schmitt, Arjun Nitin Bhagoji, Nick Feamster, Hector Garcia Crespo, Timothy Coyle, and Brian Ward. "Understanding Model Drift in a Large Cellular Network". In: *Practical Adoption Challenges of ML for Systems in Industry Workshop* (2022).

[27] Razanne Abu-Aisheh, Francesco Bronzino, Myriana Rifai, Lou Salaun, and Thomas Watteyne. "Coordinating a Swarm of Micro-Robots Under Lossy Communication". In: *2nd ACM International Workshop on Nanoscale Computing, Communication, and Applications*. 2021.

[28] Razanne Abu-Aisheh, Myriana Rifai, Francesco Bronzino, and Thomas Watteyne. "(POSTER) Impact of Connectivity Degradation on Networked Robotic Swarm Cooperation". In: *17th International Conference on Distributed Computing in Sensor Systems*. 2021.

[29] Francesco Bronzino, Elizabeth Cully, Nick Feamster, Shinan Liu, Jason Livingood, and Paul Schmitt. "Interconnection Changes in the United States". In: *IAB COVID-19 Workshop* (2021).

[30] Francescomaria Faticanti, Francesco Bronzino, and Francesco De Pellegrini. "The case for admission control of mobile cameras into the live video analytics pipeline". In: *3rd ACM Workshop on Hot Topics in Video Analytics and Intelligent Edges*. 2021.

[31] Sri Pramodh Rachuri, Francesco Bronzino, and Shubham Jain. "Decentralized modular architecture for live video analytics at the edge". In: *3rd ACM Workshop on Hot Topics in Video Analytics and Intelligent Edges*. 2021.

[32] Razanne Abu-Aisheh, Francesco Bronzino, Myriana Rifai, Brian Kilberg, Kris Pister, and Thomas Watteyne. "Atlas: Exploration and Mapping with a Sparse Swarm of Networked IoT Robots". In: *16th International Conference on Distributed Computing in Sensor Systems*. 2020.

[33] Thierry Parmentelat, Thierry Turletti, Walid Dabbous, Mohamed Naoufal Mahfoudi, and Francesco Bronzino. "nepi-ng: an efficient experiment control tool in R2lab". In: *12th ACM International Workshop on Wireless Network Testbeds, Experimental evaluation & Characterization*. 2018.

[34] Francesco Bronzino, Shreyasee Mukherjee, and Dipankar Raychaudhuri. "The Named-Object Abstraction for Realizing Advanced Mobility Services in the Future Internet". In: *Workshop on Mobility in the Evolving Internet Architecture*. 2017.

[35] P. Karimi, M. Sherman, F. Bronzino, I. Seskar, D. Raychaudhuri, and A. Gosain. "Evaluating 5G Multihoming Services in the MobilityFirst Future Internet Architecture". In: *IEEE 85th Vehicular Technology Conference*. 2017.

[36] Francesco Bronzino and Dipankar Raychaudhuri. "Abstractions and Solutions to Support Smart-objects in the Future Internet". In: *2nd Workshop on Experiences in the Design and Implementation of Smart Objects*. 2016.

[37] Kiyohide Nakauchi, Francesco Bronzino, Yozo Shoji, Ivan Seskar, and Dipankar Raychaudhuri. "vMCN: virtual mobile cloud network for realizing scalable, real-time cyber physical systems". In: *4th Workshop on Distributed Cloud Computing*. 2016.

[38] Francesco Bronzino, Chao Han, Yang Chen, Kiran Nagaraja, Xiaowei Yang, Ivan Seskar, and Dipankar Raychaudhuri. "In-network compute extensions for rate-adaptive content delivery in mobile networks". In: *IEEE Workshop on Computer and Networking Experimental Research using Testbeds*. 2014.

[39] Francesco Bronzino, Kiran Nagaraja, Ivan Seskar, and Dipankar Raychaudhuri. "Network service abstractions for a mobility-centric future internet architecture". In: *Proceedings of the eighth ACM international workshop on Mobility in the evolving internet architecture*. 2013.

Posters

[40] Razanne Abu-Aisheh, Myriana Rifai, Francesco Bronzino, and Thomas Watteyne. "(POSTER) Impact of Connectivity Degradation on Networked Robotic Swarm Cooperation". In: *2021 17th International Conference on Distributed Computing in Sensor Systems (DCOSS)*. IEEE. 2021, pp. 57–59.

[41] Paul Schmitt et al. *Correlating Network Congestion with Video QoE Degradation - a Last-Mile Perspective*. Talk at AIMS 2018, Workshop on Active Internet Measurements. 2018.

[42] Francesco Bronzino et al. *Understanding and Improving video QoE – a Last-Mile Perspective*. Poster at ACM Internet Measurement Conference (IMC) 2017. 2017.

[43] Francesco Bronzino et al. *Cloud Services Enhancements Through Application Specific Routing in MobilityFirst FIA*. Poster and Demonstration at the 22nd GENI Engineering Conference (GEC-22). 2015.

[44] Francesco Bronzino et al. *Public Safety Focus: Connected Vehicles Assisting First Responders*. Plenary talk and Demonstration at the 22nd GENI Engineering Conference (GEC-22). 2015.

[45] Francesco Bronzino et al. *Supporting Rich Network Services in Name Based Architectures*. Talk at the NSF Future Internet Architecture Workshop. 2015.

[46] Francesco Bronzino et al. *In-Network Compute Layer in MobilityFirst Future Internet Architecture FIA*. Poster and Demonstration at the 20th GENI Engineering Conference (GEC-20). 2014.

[47] Francesco Bronzino et al. *Introduction to the MobilityFirst FIA Protocol Suite*. Tutorial at the 21st GENI Engineering Conference (GEC-21). 2014.

[48] Francesco Bronzino et al. *Context Services in MobilityFirst FIA*. Plenary talk and Demonstration at the 18th GENI Engineering Conference (GEC-18). 2013.

[49] Francesco Bronzino et al. *MobilityFirst Network API use in Mobile Applications*. Poster and Demonstration at the 16th GENI Engineering Conference (GEC-16). 2013.

[50] Francesco Bronzino et al. *Multi-Homing Support in MobilityFirst FIA*. Poster and Demonstration at the 17th GENI Engineering Conference (GEC-17). 2013.

Tech reports

[51] Razanne Abu-Aisheh, Francesco Bronzino, Myriana Rifai, Brian Kilberg, Kris Pister, and Thomas Watteyne. "Exploration and Mapping using a Sparse Robot Swarm: Simulation Results". PhD thesis. Inria, 2020.

[52] Francesco Bronzino, Paul Schmitt, Sara Ayoubi, Nick Feamster, Renata Teixeira, Sarah Wasserman, and Srikanth Sundaresan. "Lightweight, General Inference of Streaming Video Quality from Encrypted Traffic". In: *arXiv preprint arXiv:1901.05800* (2019).

Software and datasets

[53] *CoastKad*. `https://bitbucket.org/wontoniii/coastkad`.

[54] *Traffic Refinery*. `https://traffic-refinery.github.io`. 2021.

[55] *Labeled video sessions dataset*. `https://nm-public-data.s3.us-east-2.amazonaws.com/dataset/all_traffic_time_10.pkl`. 2019.

[56] *Network Microscope*. `https://netmicroscope.com`. 2019.

[57] *Service Traceroute*. `https://github.com/inria-muse/service-traceroute`. 2019.

[58] *Video Collection Tools*. `https://github.com/inria-muse/video_collection`. 2019.

[59] *HostView*. https://github.com/inria-muse/. 2018.

[60] *MobilityFirst FIA Protocol Suite*. https://mobilityfirst.orbit-lab.org/wiki/. 2017.

On the news

[61] *The Truth About Faster Internet: It's Not Worth It*. https://www.wsj.com/graphics/faster-internet-not-worth-it/. 2019.

[62] *SES and Rutgers University test satellite content delivery network for sTreaming, OTT, and 5G*. https://goo.gl/CjdmRy. 2016.

[63] *WINLAB develops infrastructure for potential new internet*. https://www.dailytargum.com/article/2016/11/winlab-develops-infrastructure-for-potential-new-internet. 2016.

[64] *Deploying Future Internet Applications in Mobility First Project's GENI-Based Environment*. https://bit.ly/31wCG2o. 2015.

Funding

[65] *AAP FIL INTERFERE: Stressing Systems Security Through on the Fly Network Traffic Generation (10k EUR)*. https://fil.cnrs.fr.

[66] *AAP USMB: Decentralized Live Video Analytics at the Network Edge (3k EUR)*.

[67] *AAP USMB: Federated Learning for Privacy Preserving Distributed ML (3k EUR)*.

[68] *ANR NEMIoT: Network Methods for IoT (372k EUR)*. https://anr.fr.

[69] *ANR PARFAIT: Planning and Learning for AI-Edge Computing (560k EUR)*. https://parfait.univ-avignon.fr.

[70] *ANR-NSF MINT: Modeling Modern Network Traffic: From Data Representation to Automated Machine Learning (603k EUR)*. https://mint.univ-smb.fr.

[71] *FACCTS: Cost-Aware Feature Engineering and Model Selection forNetwork Traffic (22.5k USD)*. https://fcc.uchicago.edu/faccts/.

[72] *FACCTS: Detecting, Explaining, Mitigating Model Drift in Operational Networks (15k USD)*. https://fcc.uchicago.edu/faccts/.

[73] *FACCTS: Modeling Modern Network Traffic: From Data Representation to Automated Machine Learning (15k USD)*. https://fcc.uchicago.edu/faccts/.

[74] *In-Network Machine Learning (14k EUR)*.

[75] *Industrial contract with CELESTE (Half Ph.D. thesis funding) (84k EUR)*.