TAREQ SI SALEM

Researcher
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SUMMARY

Tareq Si Salem is a researcher at Huawei Paris Research Center. He received his Ph.D. (2022) in Computer Science from Université Côte d'Azur and Inria Sophia Antipolis. He was a Postdoctoral Research Associate (2024) at Northeastern University, Boston, Massachusetts. He was a visiting researcher (2022) at Delft University of Technology, The Netherlands. His research interests lie at the intersection of machine learning, networking, and modeling, with a focus on learning with system constraints (e.g., privacy, safety, fairness, memory, and communication). His work has been published in top academic conferences and journals, including the IEEE/ACM ToN, ACM ToMPECS, ACM SIGMETRICS, ITC, and IEEE INFOCOM. He also received the Best Paper Award at the 33rd International Teletraffic Congress (ITC'33) in 2021.

EDUCATION

Inria Sophia-Antipolis – Université Côte d'Azur, France *2019–2022*
Ph.D. in Computer Science
Supervisor: Giovanni Neglia, Research Director, Inria Sophia-Antipolis, France
Title: Online Learning for Network Resource Allocation
Reviewers:
- Douglas Leith, Professor, Trinity College Dublin, Ireland
- Leandros Tassiulas, Professor, Yale University, USA

Examiners:
- Edmund Yeh, Professor, Northeastern University, USA
- György Dán, Professor, KTH Royal Institute of Technology, Sweden
- Walid Debbous, Research Director, Inria Sophia-Antipolis, France

Defense Date: October 17, 2022
Research team: Network Engineering and Operations (NEO)

Polytech Nice Sophia – Université Côte d'Azur, France *2018–2019*
M.Sc. in Computer Science (International M.Sc. in Ubiquitous Networking)
Master thesis: Assessment of population exposure to wireless communication radiation
Advisor: A. Legout, Research Director, Inria Sophia-Antipolis
Awards: Labex UCN@Sophia Scholarship

Institut de Génie Electrique et Electronique (prev. INELEC), Algeria *2015–2017*
BS. and MS. in Electrical and Computer Engineering
Master thesis: Design and implementation of a multi-fiber reconstruction algorithm for diffusion MRI
Advisors: C. Dallila, Assoc. Professor, IGEE, and R. Deriche, Research Director (exceptional class), Inria Sophia-Antipolis

EMPLOYMENT RECORD

Northeastern University, Boston, MA, USA *03/2023–03/2024*
Postdoctoral Research Associate
I am working under the supervision of Stratis Ioannidis on Machine Learning related problems. My role spans different projects in the AI Institute for Future Edge Networks and Distributed Intelligence (AI-EDGE), Data-Centric Approaches to Distributed Machine Learning, and the Institute of Wireless Internet of Things (WIoT).

Delft University of Technology (TU Delft), The Netherlands *03/2022–08/2022*
Long-term visiting appointment
I visited the Embedded and Networked Systems (ENS) group at TU Delft to work with George Iosifidis on network optimization and economics.

Inria, Sophia-Antipolis, France *03/2019–08/2019*
Intern
Research team: Design, Implementation, and Analysis of Networking Architectures (DIANA)
Topic: Large-scale assessment of population exposure to wireless communication radiation

Schlumberger, Algeria & UAE *02/2018–07/2018*
Wireline Field Engineer
I received an exceeding expectations appraisal from MLC Schlumberger Training Center in the UAE and acquired five professional certifications during this period.

Brandt R&D – Group Cevital, Algeria *09/2017–01/2018*
Embedded Systems Engineer
My role included writing hardware abstraction layers, Android OS customization (Java, JNI, and C++), and developing Linux device drivers.

TEACHING EXPERIENCE

Subject	Location	Date
Softwares for Luxury Business Analytics	Campus Georges Méliès, Cannes, France	4 lectures (24H), fall 2022
Optimization for Machine Learning	Polytech, Sophia-Antipolis, France	2 lectures (6H), winter 2021
Distributed Optimization and Games	Polytech, Sophia-Antipolis, France	1 lectures (3H), winter 2020

ACHIEVEMENTS

Prix d'excellence d'Université Côte d'Azur *2021*
Best paper award at the International Teletraffic Congress (ITC 33) *2021*

LANGUAGES

English/French (Full professional proficiency), Kabyle/Arabic (Native).

PROGRAMMING LANGUAGES

Python, Java, C/C++, HDLs, and ML frameworks (e.g., PyTorch, Scikit-Learn, Tensorflow).

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Reviewer:
- IEEE Communications Letters
- IEEE Transactions on Mobile Computing
- IEEE/ACM Transactions on Networking
- Elsevier Journal on Computer Networks
- Elsevier Journal on Performance Evaluation
- Journal of Combinatorial Optimization
- IEEE INFOCOM

Supervision:
- Supervising/Closely working with 4 Ph.D. students at NU and BU.
- Co-advised with G. Iosifidis: M. Mäkelä and Q. J. Oschatz (CSE3000 research project), TU Delft.
- Co-advised with G. Neglia: A. Hajjaji, and A. Hafid , Ubinet Master, Université Côte d'Azur.

PUBLICATIONS

Conferences.

[C1] Tareq Si Salem, Gözde Özcan, Iasonas Nikolaou, Evimaria Terzi, Stratis Ioannidis. Online Submodular Maximization via Online Convex Optimization. *Annual AAAI Conference on Artificial Intelligence*, Vancouver, Canada, 2024.

[C2] Tareq Si Salem, George Iosifidis, Giovanni Neglia. Enabling Long-term Fairness in Dynamic Resource Allocation. *ACM SIGMETRICS*, Orlando, Florida, USA, 2023.

[C3] Yuanyuan Li, Tareq Si Salem, Giovanni Neglia, and Stratis Ioannidis. Online Caching Networks with Adversarial Guarantees. *ACM SIGMETRICS*, Mumbai, India, June 6–10, 2022.

[C4] Tareq Si Salem, Giovanni Neglia and Damiano Carra. AÇAI: Ascent Similarity Caching with Approximate Indexes. *International Teletraffic Congress (ITC 33)*, Aug. 31st–Sep. 3rd, 2021. **Best Paper Award.**

[C5] Tareq Si Salem, Gabriele Castellano, Giovanni Neglia, Fabio Pianese, and Andrea Araldo. Towards Inference Delivery Networks: Distributing Machine Learning with Optimality Guarantees. *Mediterranean Communication and Computer Networking Conference (MedComNet 2021)*, June 15–17, 2021.

[C6] Tareq Si Salem, Giovanni Neglia, and Stratis Ioannidis. No-Regret Caching via Online Mirror Descent. *IEEE International Conference on Communications (ICC 2021)*, June 14-23, 2021.

[C7] Anirudh Sabnis, Tareq Si Salem, Giovanni Neglia, Michele Garetto, Emilio Leonardi, and Ramesh K. Sitaraman. GRADES: Gradient Descent for Similarity Caching. *IEEE International Conference on Computer Communications (INFOCOM 2021)*, May 10–13, 2021.

Journals.

[J1] Tareq Si Salem, Gabriele Castellano, Giovanni Neglia, Fabio Pianese, and Andrea Araldo. Towards Inference Delivery Networks: Distributing Machine Learning with Optimality Guarantees. *IEEE/ACM Transactions on Networking, 2023.*

[J2] Tareq Si Salem, Giovanni Neglia, and Stratis Ioannidis. No-Regret Caching via Online Mirror Descent. *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (ToMPECS)*, 2023.

[J3] Tareq Si Salem, George Iosifidis, Giovanni Neglia. Enabling Long-term Fairness in Dynamic Resource Allocation. *Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)*, 2023.

[J4] Tareq Si Salem, Giovanni Neglia and Damiano Carra. Ascent Similarity Caching with Approximate Indexes. *IEEE/ACM Transactions on Networking*, 2022.

[J5] Anirudh Sabnis, Tareq Si Salem, Giovanni Neglia, Michele Garetto, Emilio Leonardi, and Ramesh K. Sitaraman. GRADES: Gradient Descent for Similarity Caching. *IEEE/ACM Transactions on Networking*, 2022.

[J6] Yuanyuan Li, Tareq Si Salem, Giovanni Neglia, and Stratis Ioannidis. Online Caching Networks with Adversarial Guarantees. *Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)*, 2022.

TALKS

[T1] Online Learning for Network Resource Allocation. Networks Seminar Series, Centre for Networked Intelligence, Indian Institute of Science, November, 2023.

[T2] Tutorial on Online Convex Optimization. Machine Learning Reading Group, Northeastern University, October, 2023.

[T3] No-Regret Caching via Online Mirror Descent. Invited session: What's new in TOMPECS? ITC 35, Turin, Italy, October, 2023.

[T4] Enabling Long-term Fairness in Dynamic Resource Allocation. Sigmetrics 2023, Orlando, Florida, USA, June, 2023

[T5] Enabling Long-term Fairness in Dynamic Resource Allocation. Poster Session, WIoT Industry Day, Boston, MA, USA, May, 2023.

[T6] Online Learning for Network Resource Allocation. AI EDGE Seminar Series 22, Boston, MA, USA, April, 2023.

[T7] AÇAI: Ascent Similarity Caching with Approximate Indexes. ITC 33, August, 2021.

[T8] Towards Inference Delivery Networks: Distributing Machine Learning with Optimality Guarantees. MedComNet 2021, June, 2021.

[T9] No-Regret Caching via Online Mirror Descent. ICC 2021, June, 2021.