

# Mohammad Imran SYED

*Ph.D. Computer Science*

## Education

- 2020 - 2023 **Ph.D. Computer Science**, *Network and Performance Analysis team (NPA), LIP6, Sorbonne Université, Paris, France.*
- 2017 - 2019 **M.Sc. ICT Innovation**, *EIT Digital Master School, Technische Universität, Berlin, Germany and Sorbonne Université, Paris, France, sehr gut and mention bien.*
- 2011 - 2012 **M.Sc. Mobile and Satellite Communications**, *University of South Wales (formerly University of Glamorgan), Treforest, United Kingdom, merit.*
- 2006 - 2010 **B.Sc. Electrical Engineering (Telecom)**, *Bahria University, Islamabad, Pakistan, silver medal.*

## Theses

- Ph.D. *Wireless passive measurements: tool, redundancy, measurements, and analyses - as a part of ANR-MITIK project.*
- EIT M.Sc. *The Challenges of Trace-Driven Wi-Fi Emulation.*
- USW M.Sc. *Research Study in Achieving LTE Goals by Overcoming Physical Layer and Network Challenges (Distinction).*
- B.Sc. *Design and Simulation of OFDM Transceiver in MATLAB.*

## Experience

- 2024-present **Postdoctoral Researcher and Teaching Assistant**, *Complex Systems Engineering Department (DISC), ISAE-SUPAERO, Toulouse, France.*
- Co-supervised practical (Travaux pratiques - TP) sessions of Networking course for 2nd-year Bachelor students.
  - An accepted paper on routing optimisation in LEO satellites, will be presenting at the end of October 2025.
  - Currently working on QoS in LEO networks.
- 2023-2024 **Engineer @ ENE5AI project**, *Network and Performance Analysis team (NPA), LIP6, Sorbonne Université, Paris, France.*
- Worked in collaboration with Paris Fire Brigade to create and deploy a communication network for them using 5G and Wi-Fi mesh network for a full-fledge intervention.
  - Focus was on measuring the quality of audio and video in a multi-hop Wi-Fi mesh network.

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- 2020 - 2024 **Teaching Assistant**, *Network and Performance Analysis team (NPA)*, LIP6, Sorbonne Université, Paris, France.
- Responsible for the tutorial (Travaux dirigés - TD) and practical (Travaux pratiques - TP) sessions of the following courses:
    - Internet Routing
    - Wireless and Mobile Computing (WMC)
    - Mobilité et sans fil (MOB)
- 2019 - 2019 **Master thesis**, *Institut National de Recherche en Informatique et en Automatique (INRIA)*, Paris, France.
- 2017 - 2017 **Drive Test and Post-processing Intern**, *TurnoTech - A Telecom Subcontractor*, Islamabad, Pakistan.
- Drive test with the help of software: Nemo Outdoor and Genex Probe.
  - Post Processing with the help of software: MapInfo and Nemo Analyze.
- 2015 - 2015 **RF Optimisation (North) Intern**, *Jazz (formerly Mobilink PMCL) - A Telecom Operator*, Islamabad, Pakistan.
- Created 2G and 3G statistics tool in Excel.
  - Created Nationwide Dashboard Tool for Drop Call Rate KPI.
  - Created KPIs & reports on PRS.
  - Created IOIM/RTWP heat-maps on MapInfo.
  - Trouble Ticket handling.
  - Cell creation (piano file) on MapInfo using TRF tool.
  - 2G and 3G drive testing on TEMS Investigation.
  - Post Processing on MapInfo.
- 2013 - 2014 **Graduate Small Cell Engineer**, *Alcatel-Lucent*, Swindon, United Kingdom.
- Worked as Femto Radio Resource Management (Layer 3) Software Developer for 3G (UMTS) Femto Cells.
  - Development was in C++, with state machine code generated from a UML model. My responsibilities included development, creating CPP Unit tests and Python based end to tests.
- 2010 - 2011 **Intern in Managed Services Department – CMPak Project**, *Alcatel-Lucent*, Islamabad, Pakistan.
- Learnt and practiced the work of a Network Operations Centre (NOC) Engineer- managing BTS sites alarms on software.

## Languages

English - C2  
Urdu - Native

French - B1  
Saraiki- Mother tongue

## Skills

Wireless networks  
Python  
Data analytics  
L<sup>A</sup>T<sub>E</sub>X

Wireless measurements  
Linux  
MATLAB  
MS Office

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## Miscellaneous Experience

- 2022 & 2023 Co-organized the NPA Ph.D. students, postdocs, and interns day.
- 2021 - 2022 Supervised 2 groups of M1 students for projects:
- Impact of TP-Link WN 722N and Sniffer placement on trace completeness.
  - Time synchronization, merging, and trace completeness for Bluetooth - resulted in a python tool, called BLEPal, for Bluetooth trace synchronization.
- 2021 Participated as a reviewer in Shadow PC of AlgoTel/CoRes 2021.

## Tool(s) developed

- Developed a python tool, called PyPal, for Wi-Fi trace synchronization and merging.

## References

### Dr. Anne FLADENMULLER

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### Dr. Marcelo DIAS DE AMORIM

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## Research Publications

### Journal Articles

- [1] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. "Unity is strength: Improving Wi-Fi passive measurements through sniffer redundancy". In: *Ad Hoc Networks* (Sept. 2023), p. 103287. ISSN: 1570-8705. DOI: <https://doi.org/10.1016/j.adhoc.2023.103287>.

### Conference Proceedings

- [1] P. V. Rubinstein, F. D. M. Silva, G. Fittipaldi, **M. I. Syed**, R. S. Couto, A. Fladenmuller, L. H. M. K. Costa, and M. Dias de Amorim. "Diversité spatio-temporelle et localisation". In: *CORES 2025 - 10èmes Rencontres Francophones sur la Conception de Protocoles, l'Evaluation de Performances et l'Expérimentation des Réseaux de Communication*. Saint Valéry-sur-Somme, France, June 2025. URL: <https://hal.science/hal-05033014>.
- [2] K. Ouali, T.-M.-T. Nguyen, **M. I. Syed**, A. Fladenmuller, B. Kervella, and N. Peugnet. "Gateway Selection in 5G/Wi-Fi Architecture: A Fire Emergency Case Study". In: *2024 20th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob)*. Dec. 2024. DOI: 10.1109/WiMob61911.2024.10770457.
- [3] P. Videira Rubinstein, F. Dias de Mello Silva, **M. I. Syed**, A. Fladenmuller, M. Dias de Amorim, and L. H. Maciel Kosmalski Costa. "Estimativa de Distância em Redes Wi-Fi usando Super-sniffers". In: *Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos*. Niterói, Rio de Janeiro, Brazil, May 2024. URL: <https://hal.science/hal-04510570>.

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- [4] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. "RSSI: Lost and Alone, a Case for Redundancy". In: *2022 18th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob)*. Nov. 2022. DOI: 10.1109/WiMob55322.2022.9941697.
- [5] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. "How much can Sniffer Redundancy Improve Wi-Fi Traffic?" In: *2022 IEEE 95th Vehicular Technology Conference: (VTC2022-Spring)*. June 2022. DOI: 10.1109/VTC2022-Spring54318.2022.9860874.
- [6] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. "Assessing the Completeness of Passive Wi-Fi Traffic Capture". In: *2022 International Wireless Communications and Mobile Computing (IWCMC)*. May 2022. DOI: 10.1109/IWCMC55113.2022.9824970.
- [7] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. "Jusqu'où la redondance peut aider dans la capture passive de trafic Wi-Fi". In: *CORES 2022 – 7ème Rencontres Francophones sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication*. Saint-Rémy-Lès-Chevreuse, France, May 2022. URL: <https://hal.archives-ouvertes.fr/hal-03658730>.










### Preprints/Working Papers

- [1] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. "Comparative Analysis of Single- and Multi-Interface Super-Sniffers in Wi-Fi Passive Monitoring". working paper or preprint. Oct. 2024. URL: <https://hal.science/hal-04724149>.
- [2] **M. I. Syed**, R. Teixeira, S. Ayoubi, and G. Grassi. "The Challenges of Trace-Driven Wi-Fi Emulation". working paper or preprint. Aug. 2019. URL: <https://hal.science/hal-02468864>.

### Technical Reports

- [1] N. Achir, A. Carneiro Viana, M. Dias de Amorim, F. Dias de Mello Silva, G. Farhi-Rivasseau, A. Fladenmuller, Y. Ghamri-Doudane, J.-L. Guillaume, A. Huchet, A. K. Mishra, F. Molano Ortiz, and **M. I. Syed**. *D3.3: Trace observations*. Tech. rep. D3.3. Sorbonne Université (Paris, France) ; Inria Saclay - Île de France ; La Rochelle Université, France, Dec. 2024. URL: <https://hal.science/hal-04991691>.
- [2] N. Achir, A. Carneiro Viana, M. Dias de Amorim, F. Dias de Mello Silva, A. Fladenmuller, Y. Ghamri-Doudane, J.-L. Guillaume, A. Huchet, A. K. Mishra, F. Molano Ortiz, and **M. I. Syed**. *D2.2b: Measurement tools, data collection and device association*. Tech. rep. D2.2b. Sorbonne Université (Paris, France) ; Inria Saclay - Île de France ; La Rochelle Université, France, Dec. 2024. URL: <https://hal.science/hal-04995763>.
- [3] N. Achir, A. Carneiro Viana, M. Dias de Amorim, F. Dias de Melo Silva, A. Fladenmuller, Y. Ghamri-Doudane, J.-L. Guillaume, A. Huchet, A. K. Mishra, F. Molano Ortiz, and **M. I. Syed**. *D2.2a: Measurement infrastructure deployment and raw data collection*. Tech. rep. D2.2a. Sorbonne Université (Paris, France) ; Inria Saclay - Île de France ; La Rochelle Université, France, Dec. 2024. URL: <https://hal.science/hal-04995688>.
- [4] N. Achir, A. Carneiro Viana, M. Dias de Amorim, F. Dias de Mello Silva, A. Fladenmuller, Y. Ghamri-Doudane, J.-L. Guillaume, A. Huchet, A. K. Mishra, F. Molano Ortiz, and **M. I. Syed**. *D3.2: Trace merging on a per-user basis*. Tech. rep. D3.2. Sorbonne Université (Paris, France) ; Inria Saclay - Île de France ; La Rochelle Université, France, Feb. 2024. URL: <https://hal.science/hal-04991491>.

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- [5] N. Achir, A. Carneiro Viana, M. Dias de Amorim, F. Dias de Mello Silva, G. Farhi-Rivasseau, A. Fladenmuller, Y. Ghamri-Doudane, J.-L. Guillaume, A. Huchet, A. K. Mishra, F. Molano Ortiz, C. Palamidessi, and **M. I. Syed**. *D3.1: Sanitization strategies and utility results*. Tech. rep. D3.1. Sorbonne Université (Paris, France) ; Inria Saclay - Île de France ; La Rochelle Université, France, Feb. 2023. URL: <https://hal.science/hal-04991474>.
- [6] M. F. Akli, N. N. E. A. Boukerras, N. Derradji, D. Laga, and **M. I. Syed**. *BLEPal*. Technical Report. Sorbonne Université, UPMC, Aug. 2022. URL: <https://hal.science/hal-03765103>.
- [7] N. Bencherif, M. Chabane, L. Mehidi, L. Paredes, and **M. I. Syed**. *Impact of TP-Link WN 722N and Sniffer placement on trace completeness*. Research Report. Sorbonne Université, UPMC, May 2022. URL: <https://hal.science/hal-03752126>.
- [8] **M. I. Syed**, A. Fladenmuller, and M. Dias de Amorim. *PyPal: Wi-Fi Trace Synchronization and Merging Python Tool*. Technical Report. LIP6 UMR 7606, UPMC Sorbonne Université, France, Mar. 2022. URL: <https://hal.archives-ouvertes.fr/hal-03618014>.
- [9] N. Achir, A. Carneiro Viana, M. Dias de Amorim, F. Dias de Mello Silva, A. Fladenmuller, Y. Ghamri-Doudane, J.-L. Guillaume, A. Huchet, L. Jouans, A. K. Mishra, F. Molano Ortiz, and **M. I. Syed**. *D2.1: Architectural design and instantiation*. Tech. rep. D2.1. Sorbonne Université (Paris, France) ; Inria Saclay - Île de France ; La Rochelle Université, France, Feb. 2021. URL: <https://hal.science/hal-04991451>.

## Invited Talks

- Talk titled "Towards mobility: Evaluation of wireless devices through passive measurements" delivered to Self-Organizing Future Ubiquitous Networks (FUN) team, INRIA, Lille, France on 22<sup>nd</sup> May 2023.
- Talk titled "Navigating the LEO Network: A Routing Optimisation Approach" delivered at Séminaires Toulousains en Réseaux (STORE) seminar held at ISAE-SUPAERO, Toulouse on 17<sup>th</sup> March 2025.

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