

SHAZIA TABASSUM, PhD.

AI & Machine Learning Researcher | INESC TEC, University of Porto
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RESEARCH PROFILE

AI and Machine Learning researcher with a PhD in Informatics Engineering, majoring in Machine Learning, from the University of Porto. Research experience at INESC TEC since 2015, including Research Assistant, Postdoctoral and Auxiliary Researcher roles. Research articles with more than 1100 citations. Currently supervising 1 PhD and 4 MSc dissertations and contributing to projects as PI/Co-PI and submitting EU project proposals.

RESEARCH INTERESTS

- Multimodal data processing
- Neuro-symbolic AI
- Agentic AI
- Knowledge graphs
- Graph neural networks
- Machine learning and evolving/temporal data
- Anomaly and fraud detection

ACADEMIC APPOINTMENTS

Jul 2022 – present
Senior Researcher (Investigador Auxiliar)
INESC TEC, University of Porto, Portugal

Jun 2020 – 2022
Postdoctoral Researcher
INESC TEC, University of Porto, Portugal

Apr 2015 – May 2020
Research Assistant
INESC TEC, University of Porto, Portugal

Feb 2010 – May 2011
Lecturer (University Teacher)
New Science PG College, India

Jun 2007 – Dec 2009
Software Engineer
Tech Mahindra Ltd, India

EDUCATION

2015 – 2020
PhD / Programa Doutoral em Engenharia Informática
Universidade do Porto, Faculdade de Engenharia, Portugal

Thesis: “Massive scale streaming graphs: Evolving network analysis and mining”.

2004 – 2007 **Master of Computer Applications**
Kakatiya University, India

2000 – 2003 **Bachelor of Computer Applications**
Kakatiya University, India

RESEARCH PROJECTS

Mar 2025 – Till date **EnSafe**
Co-Principal Investigator (Co-PI)

2024.07677.IACDC

Jul 2023 – Dec 2025 **Health from Portugal (HfPT)**
Research Fellow

C630926586-00465198;

Sep 2023 – Sep 2025 **ATTRACT DIH**
Post-doc Fellow

101083770

Dec 2021 – Jun 2023 **City Analyser**
Research Fellow

POCI-01-0247-FEDER-039924

Jun 2020 – Sep 2021 **SKORR-1**
Post-doc

NORTE-01-0247-FEDER-039922

Jan 2020 – Dec 2021 **The Healing and Emotional Power of Music and Dance**
Researcher

PTDC/ART-PER/29641/2017

May 2017 – May 2020 **Network Science for Urban Engineering**
PhD Student Fellow

FCT/4755/3/5/2017/S

Feb 2017 – Jun 2019 **TEC4Growth – SMILES 7**
PhD Student Fellow

NORTE-01-0145-FEDER-000020

Jun 2015 – Jan 2017 **MAESTRA – Massive incompletely annotated and structured data streams**
PhD Student Fellow

UID/EEA/50014/2013

SELECTED PUBLICATIONS

- Golam, S.; Tabassum, S.; Hamasaki, S. “Reasoning-based LLMs in Scientific Peer Review Generation”. HCII 2027.
- Oliveira, S.; Tabassum, S.; Gama, J.; Garcia, A.; Santana, P. “Conditional Motif-Based Graph Convolutional Network for Anomaly Detection”. IDA 2026. DOI: 10.1007/978-3-032-23833-7_24.
- Oliveira, S.; Tabassum, S.; Gama, J.; Santana, P. “Detecting Suspicious Activities in Waste Transport Data via Temporal and Network-Aware Change Detection”. 2026. DOI: 10.1007/978-3-032-19096-3_1.
- Shaji, N.; Tabassum, S.; Ribeiro, R. P.; Gama, J.; Santana, P.; Garcia, A. “Network-Based Anomaly Detection in Waste Transportation Data with Limited Supervision”. Applied Network Science. 2025. DOI: 10.1007/s41109-025-00753-4.
- Tabassum, S.; Gama, J.; Azevedo, P. J.; Cordeiro, M.; Martins, C.; Martins, A. “Social network analytics and visualization: Dynamic topic-based influence analysis in evolving micro-blogs”. Expert Systems 40(5), 2022. DOI: 10.1111/exsy.13195.
- Tabassum, S.; Gama, J.; Azevedo, P.; Teixeira, L.; Martins, C.; Martins, A. “Dynamic Topic Modeling Using Social Network Analytics”. Progress in Artificial Intelligence, Springer, 2021. DOI: 10.1007/978-3-030-86230-5_39.
- Tabassum, S.; Gama, J. “On fast and scalable recurring link prediction in evolving multi-graph streams”. 2020. Network Science. DOI: 10.1017/nws.2019.64.
- Azad, M. A.; Bag, S.; Tabassum, S.; Gama, J. “Fraud Detection in Mobile Phone Networks: A Spammer Detection Approach”. IEEE Transactions on Emerging Topics in Computing. 2020, DOI: 10.1109/TETC.2017.2771251.
- Tabassum, S.; Pereira, F. S. F.; Fernandes, S.; Gama, J. “Social network analysis: An overview”. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery. 2018. DOI: 10.1002/widm.1281.

CONFERENCE PAPERS & CONTRIBUTIONS

- Tabassum, Shazia. “Reasoning-based LLMs in Scientific Peer Review Generation”. HCI International, Berlin, 2027.
- Tabassum, S.; Gama, J. “Biased Dynamic Sampling for Temporal Network Streams”. 2018. DOI: 10.1007/978-3-030-05411-3_42.
- Tabassum, Shazia; Gama, Joao. “Sampling Evolving Ego-Networks with forgetting Factor”. 2016. DOI: 10.1109/MDM.2016.90.
- Tabassum, S.; Gama, J. “Sampling massive streaming call graphs”. 2016. DOI: 10.1145/2851613.2851654.
- Tabassum, S. “Social Network Analysis of Mobile Streaming Networks”. 2016. DOI: 10.1109/mdm.2016.84.
- Tabassum, S.; Gama, J. “Evolution Analysis of Call Ego-Networks”. 2016. DOI: 10.1007/978-3-319-46307-0_14.

SUPERVISION

- Currently supervising 1 PhD and 4 MSc dissertations.
- Statistically Grounded Evaluation of Domain-Specific Large Language Models: Constraint-Based Validation — Supervisor, 2026–2027.
- Large Language Models Orchestration for Scientific Publication Automatic Summarization — Supervisor, 2026–2027.
- Fine-Tuning Large Language Models for Domain-Specific Language Understanding and Reasoning — International visiting Researcher Program, Host Supervisor, 2025.
- Detecting Suspicious Activities in Waste Transport Data via Temporal and Network-Aware Change Detection — Supervisor, 2025.
- On detecting anomalies in healthcare data — Supervisor, 2024.
- Mentoring/Tutoring: Detecting Anomalies in Attributed Graphs — 2024–2025.

ACADEMIC SERVICE & RESEARCH COMMUNITY

- Member of the Organising Committee, ECML PKDD 2025.
- President of the Organising Committee, Evolving Networks Workshop, 2017.
- Member of the Organising Committee, Discovery Challenge (Taxi fare prediction), 2017.
- Member of the Organising Committee, Workshop on High Velocity Mobile Data Mining, IEEE International Conference on Mobile Data Management, 2016.
- Conference Scientific Committee, ACM Symposium on Applied Computing (2016–2027).

- Journal Scientific Committee, International Journal of Data Science and Analytics (2024–present).
- Jury / academic degree examination activities, including 2023 and 2025.

SELECTED RESEARCH PRESENTATIONS

- Conditional Motif-based Graph Convolutional Network for Anomaly Detection in the Waste Management Network — 23 Apr 2026.
- Detecting suspicious activities in waste transport data via temporal and network-aware change detection — 15 Sep 2025.
- Network-Based Anomaly Detection in Waste Transportation Data — 11 Dec 2024.
- Anomaly Detection and Explanation — 6 Oct 2023.
- Data-centric approaches for fraud detection in Telephony — 24 Jan 2023.
- Dynamic Topic Modeling Using Social Network Analytics — 2021.
- Dynamic Sampling for high speed streaming graphs — 2019.
- Tutorial on Knowledge Discovery from Temporal Social Network — 2018.
- Tutorial on Dynamic Sampling for Data Streams — 2018.
- Big Data Science for Urban Planning — 2018.

LANGUAGES

- English — C2 speaking / C2 reading
- Portuguese — A2 speaking / B2 reading
- Hindi — C2 speaking / C2 reading

IDENTIFIERS & LINKS

- Ciência ID: 5911-4B8A-6231
- ORCID: 0000-0003-0782-7054
- AuthenticusID: R-00F-R11
- Google Scholar: https://scholar.google.pt/citations?user=1I-AeLsAAAAJ&hl=pt-PT
- INESC TEC profile: https://www.inesctec.pt/en/people/shazia-tabassum#short_bio
- LinkedIn: https://www.linkedin.com/in/shaziatabassum1/

SKILLS

- Programming Languages: Python, R, Java, SQL
- Platforms — Hugging face, VLLM, Jupiter Notebooks, VS studio, Pycharm
- Clouds — AWS, GCP

OTHER DETAILS

- Gender: Female
- Nationality: Portuguese