Sana Trigui
Ph.D. Student in Computer Systems Engineering

Contact Information

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Location: Sfax, Tunisia
Date of Birth: February 27, 1992

Professional Objective

Ph.D. in Computer Systems Engineering with expertise in deep learning, multimodal artificial intelligence, medical image analysis, and biomedical signal processing. My research focuses on developing advanced neural network architectures for brain imaging and multimodal biomedical data analysis. I am seeking a research position in cognitive neuroscience and artificial intelligence to contribute to the development of biologically inspired deep learning models and brain decoding methods.

Education

Ph.D. in Computer Systems Engineering | 2026
National School of Engineers of Sfax (ENIS), Tunisia
Specialization: Intelligent Systems Engineering

Master's Degree in Computer Science Research | 2017
Higher Institute of Computer Science and Multimedia of Sfax (ISIMS), Tunisia

Bachelor's Degree in Computer Science | 2014
Higher Institute of Computer Science and Multimedia of Sfax (ISIMS), Tunisia

High School Diploma in Computer Science (Baccalaureate) | 2011 Tunisia

Research Interests

- Deep Learning
- Multimodal Artificial Intelligence
- Cognitive AI
- Brain MRI Analysis
- Biomedical Signal Processing
- Vision Transformers
- Medical Image Analysis
- Explainable Artificial Intelligence

- Brain Decoding
- Computational Neuroscience

Publications

1. Trigui, S.; Bezine, H. DuoViT-AD: A dual-scale vision transformer for Alzheimer's disease detection from brain MRI. Pattern Recognit. Lett. 2026, 203, 133–138, https://doi.org/10.1016/j.patrec.2026.02.033.
2. Trigui, S., Bezine, H. & Agarwal, B. A generative–discriminative deep learning framework for multi-class gait analysis in neurodegenerative disorders. *SIViP* **20**, 357 (2026). https://doi.org/10.1007/s11760-026-05412-4
3. Trigui, S., Bezine, H., Agarwal, B. (2026). A Multi-descriptor Stacking-Based Framework for Parkinson's Disease Detection from Handwriting. In: Yoshikawa, M., Meng, X., Cao, Y., Xiao, C., Chen, W., Wang, Y. (eds) Advanced Data Mining and Applications. ADMA 2025. Lecture Notes in Computer Science(), vol 16197. Springer, Singapore. https://doi.org/10.1007/978-981-95-3453-1_36
4. Trigui, S., Boujelben, I., Jamoussi, S. (2017). SMRE: Semi-supervised Medical Relation Extraction. Proc. of ICNLSSP, Casablanca, Morocco, p. 121.
5. Trigui, S., Boujelben, I., Jamoussi, S., & Ben Ayed, Y. (2019). ADAL System: Aspect Detection for Arabic Language. Proc. of HIS, pp. 31–40, Springer, Cham.
6. Trigui, S., Boujelben, I., Jamoussi, S., & Benayed, Y. (2020). A Hybrid Method for Arabic Aspect-Based Sentiment Analysis. International Journal of Hybrid Intelligent Systems, 16(3), 1–12. DOI: 10.3233/HIS-200285

Teaching Experience

University Lecturer | Faculty of Science of Sfax
Courses Taught:

- Algorithms and Programming
- Artificial Intelligence and Machine Learning
- Signal Processing
- Java Programming
- J2EE
- User Interface & User Experience (UI/UX)

Supervision of Student Projects:

- End-of-Year Projects (PFA): Voice analysis and gait analysis for neurodegenerative disease detection
- End-of-Studies Projects (PFE): Automated MRI analysis systems and license plate detection systems

Research Expertise

- **Deep Learning:** CNNs, Vision Transformers, GANs/WGAN-GP, Multimodal Learning, Attention Mechanisms
- **Machine Learning:** Supervised, Unsupervised, Semi-supervised Learning, Ensemble Learning
- **Medical AI:** Brain MRI Analysis, Biomedical Signal Processing, Handwriting Analysis, Gait Analysis
- **Programming:** Python (PyTorch, TensorFlow), C/C++, Java, SQL
- **Scientific Tools:** MATLAB, Git, Eclipse, NetBeans

Languages

Arabic: Native
French: Fluent
English: Fluent