DANTE TRABASSI

AI SPECIALIST IN HEALTHCARE | CLINICAL DATA ANALYSIS

Rome, Italy | dantetrb@gmail.com | Linkedin

Biomedical engineer and PhD candidate in Neuroscience, with expertise in AI applied to clinical data and wearable sensors. I work at the intersection of healthcare, data science, and explainable machine learning.
While rooted in movement disorders, my methodological approach is applicable across diverse healthcare and clinical areas including balance assessment, falls prediction, neurodegenerative diagnostics, and early-stage disease modelling.

AREA OF EXPERTISE

- ML for Biomedical Signals
- Explainable AI
- Feature Engineering & Model Interpretation
- TimeSeries Classification & Forecasting
- Wearable Sensor Data (IMU, EMG)
- Gait Analysis & Movement Disorders
- Clinical Data Integration & Interpretation
- Scientific Communication & Data Visualization

PROFESSIONAL EXPERIENCE

Research Fellow | Sapienza University of Rome **2021 - Present**

- Lead researcher in AI-driven projects on gait analysis and neurological disorders (Parkinson's, Spastic Paraplegia, Stroke, Cerebellar Ataxia and Migraine) using wearable sensors data (IMU, EMG)
- Developed xML model for clinical decision support and patients stratifications.
- Integrated time-series data with clinical variables to identify disease-specific patterns and prodromal indicators.
- Applied Generative AI techniques (ctGAN & others) to balance small dataset and improve rare disease classification performance
- Guest Lecturer - Artificial Intelligence in Medical Applications - University of Milan & University of Pavia (2024) Delivered invited lectures and seminars within the MSc interfaculty course Medical Applications and Healthcare, focusing on wearable analytics, biomedical signal processing, and interpretable machine learning.

Independent Consultant | Biomedical Enginnering & Digital Health **2021 - Present**

- Supported early-stage startups and academic teams in projects involving biomedical signal processing, wearable technology, digital health and applied AI for clinical applications.

EDUCATION

PhD in Neuroscience **Oct 2023 - Present**
Sapienza University of Rome

- Research Focus: AI applied to gait analysis, wearable data and movement disorders

Licensed Professional Engineer (Italy) **Sep 2020**
Sapienza University of Rome

- Passed the national qualification exam for Biomedical & Industrial Engineering.

MSc in Biomedical Engineering (110/110) **Jun 2020**
Sapienza University of Rome

- Thesis published in The Cerebellum: Identification of Gait Unbalance and Fallers Among Subjects with Cerebellar Ataxia by a Set of Trunk Acceleration-Derived Indices of Gait.

BSc in Clinical Engineering **Mar 2017**
Sapienza University of Rome

ADDITIONAL INFORMATION

- **Languages:** Italian (native), English.
- **Techical Tools:** Python (PyTorch, scikit-learn, SHAP) · Deep Learning (BiLSTM, CNN, Transformer) · Generative AI (ctGAN) · Signal Analysis (IMU/EMG, RQA, Entropy) · SQL · Git · Streamlit · VS Code / Jupyter · Excel Automation
- **Certifications:** Computer Science & Programming using Python (MIT), Machine Learning (Stanford), Data Engineering (ProfessionAI), DeepLearning Specialization (DeepLearning.AI) and International Summer School on Wearable Sensors in Sport (Foro Italico University of Rome).
- **Selected Awards/Conferences:** Sapienza Research Grant - PI, "Innovative data augmentation to optimize subgroup analysis in hereditary cerebellar ataxia" (2024); Oral presentation - World Conference on Data Science and Statistics (Frankfurt, 2023); Invited Speaker - SIRN (2025), AIFI (2024) and SINC (2023)
- **Selected Publications:** *Trabassi D.* et al Machine Learning Approach to Support the Detection of Parkinson's Disease in IMU-Based Gait Analysis; *Trabassi D.* et al. Optimizing Rare Disease Gait Classification through Data Balancing and Generative AI: Insights from Hereditary Cerebellar Ataxia.
- **Full list of publications**: Google Scholar