

Panagiotis Zazos

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SUMMARY

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Data Scientist leveraging a Computer Science background to build interpretable AI products. Focused on multi-modality, I adapt Deep Learning techniques to diverse domains—from EEG sleep staging to RAG-driven narratives. Currently a Task Leader for EU-funded xAI research with contributions recently presented at ExpliMed 2025. Passionate about the engineering side of Data Science: architecting pipelines, ensuring model robustness, and delivering functional MVPs in product-focused environments.

TECHNICAL SKILLS

- Programming:** Python, SQL, Ruby on Rails
- AI / ML Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn
- Proficiencies:** LLMs, Explainable AI (SHAP, LIME, GradCAM), LoRA
- Libraries & Tools:** Pandas, NumPy, Hugging Face, DeepEval, Git, Tableau, D3.js, Prodigy

PROJECTS

- Music Mood Classification and Recommendation API**

Deep Learning, MIR, Web API

 - Developing a web API for music mood classification by fine-tuning a pre-trained ResNet-18 on the MTG-Jamendo dataset using LoRA adapters.
 - Applying transfer learning on extracted embeddings to an MLP model for valence-arousal prediction based on Spotify's ground truth data.
 - API delivers personalized music recommendations and offers interactive visualizations of acoustic features and emotion mappings.

Master's Thesis

Python, PyTorch, LoRA
- Time-Series EEG Sleep Staging Classification**

Deep Learning, Time-Series, XAI

 - Built a CNN-CNN framework to classify 5 sleep stages from EEG epochs, using a custom focal loss function to manage class imbalance.
 - Engineered a Style-Transfer GAN in collaboration with NSCR'D' to transform EEG data, providing explainable insights into class-specific signal characteristics.

HORIZON European Project

Python, TensorFlow, GANs
- Palestinian Conflicts and Humanitarian Crisis Visualization**

Data Visualization

 - Leveraged data from Humdata and other sources to develop visualizations including an annual map of conflict events, analysis of commodity prices, and examination of the water crisis.

Personal Project

D3.js, Python, Plotly
- Automated Pipeline for xAI-Driven Narrative Generation & Validation**

Local Development

 - Engineered an xAI module to extract feature attributions (SHAP, Grad-CAM) from target models into structured JSON payloads.
 - Developed a 'Narrator' LLM, fine-tuned with PEFT/LoRA, to transform xAI outputs into domain-specific, compliant natural language explanations.
 - Implemented a 'Judge' LLM using DeepEval's GEval for automated validation of narrative quality against accuracy, safety, and actionability pillars.

LLM Project

Python, LLMs, PEFT, LoRA, DeepEval, SHAP

EXPERIENCE

Data Scientist & Research Associate <i>Four-Dot Infinity</i>	Oct 2024 – Present <i>Athens, GR</i>
<ul style="list-style-type: none">• Acting as Task Leader for Explainability and Robustness within the EU-funded MANOLO project.• Developed and implemented a comprehensive suite of xAI techniques (SHAP, LIME, GradCAM) and authored novel evaluation metrics (fidelity, surrogacy efficacy score) to validate model interpretability.• Contribute significantly to the structuring and writing of European funding proposals, translating complex technical solutions into compelling, both technical and non-technical, narratives.• Co-author academic papers based on project research, contributing to the dissemination of findings within the scientific community.	
Software Developer <i>HQEngine</i>	Jun 2021 – May 2022 & Jun 2023 – Mar 2024 <i>Melbourne, Australia (Remote)</i>
<ul style="list-style-type: none">• Developed features for a start-up application, focusing on Sales & Spend eInvoicing and ePayments using Ruby on Rails, HTML, and CSS.• Integrated XML document generation features catering to PEPPOL e-Invoicing standards for compliant digital transactions.• Implemented robust validation mechanisms for Australian Business Numbers (ABNs) to ensure transaction legitimacy.• Performed full-stack debugging to identify and resolve issues, ensuring seamless functionality and regulatory adherence.	
IT on ERP Entersoft Business Suite <i>Hellenic Army</i>	Jul 2022 – May 2023 <i>Athens, Vyronas, GR</i>
<ul style="list-style-type: none">• During mandatory military service, utilized the ERP Entersoft Business Suite for the Special Army Unit Supply Center (EKEMS), managing the recording of invoices, product codes, and commercial transactions.	
Informatics Intern <i>Elxis Group</i>	Sep 2020 – Jan 2021 <i>Athens, Illisia, GR</i>
<ul style="list-style-type: none">• Managed real-time tweet collection and filtering from the Twitter API based on earthquake events.• Implemented tweet pre-processing and annotation using Prodigy to build a multi-class classification model for predicting earthquake intensity.	

PUBLICATIONS

xSTAE: Explaining Classifier Decisions via Style Transfer Autoencoding <i>ExpliMed 2025</i>	Bologna, Italy 2025
Co-authored paper introducing a style-transfer system for counterfactual explanations in sleep-stage classification.	
Contribution: Designed and implemented the dual-CNN classification framework used as the backbone for the explainer system.	

EDUCATION

National and Kapodistrian University of Athens <i>M.S. in Data and Knowledge Management</i>	Athens, GR Sep 2023 – Jan 2026
National and Kapodistrian University of Athens <i>B.S. in Informatics and Telecommunications</i>	Athens, GR Jan 2015 – Sep 2021

LANGUAGES & INTERESTS

Languages: Greek (Native), English (Highly Proficient)
Interests: Cross-fit training, Boulderling, Hiking, Reading, Writing, Drawing, Music, Video Games