PEDRO GONZÁLEZ-BARRACHINA

Senior Machine Learning Engineer

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SUMMARY

Innovative Senior Machine Learning Engineer with over 4 years of experience in leading cutting-edge projects at the intersection of research and practical applications. Proven expertise in driving advances in machine learning operations with scalable production integration. Deeply experienced in research methodologies, contributing to improvements in biometric technology with published work in the music domain. Passionate about leveraging state-of-the-art deep learning technologies to deliver impactful solutions in real-world applications.

PROFESSIONAL EXPERIENCE

Senior Machine Learning Engineer   Jan 2023 – Present
Alice Biometrics   *Remote*
- **Lead Projects:** directed cross-functional machine learning projects, defining technology requirements, collecting datasets, training models, and integrating them into scalable production systems.
- **MLOps:** boosted production service performance by cutting response time by 200% and reducing costs by 80%, through the strategic deployment of Nvidia Triton inference server.
- **Software Development:** enhanced maintainability and scalability of FastAPI-based Python services by refactoring codebases, introducing modular architecture, and optimizing CI/CD pipelines.

Machine Learning Engineer   Jan 2023 – Jan 2024
Alice Biometrics   *Remote*
- **World Leading:** participate in face recognition and face PAD projects achieving top 1 in 3 types of attacks among 82 participants in the NIST FATE PAD.
- **Research:** investigate deep learning architectures, models, and methods to improve our technology, achieving improvements in our error rate of up to 50%.

Deep Learning Engineer   Jan 2021 – Jan 2023
Facephi   *Alicante, Spain*
- **Biometrics:** Participate in Face Recognition and Face PAD teams achieving top 20% position in FRVT NIST.
- **Image Quality Assessment:** lead team improving the user experience and conversion rate by 10%.
- **Collaboration:** Collaborate with C++ teams to implement deep and machine learning models in edge devices.

EDUCATION

PhD, Computer Science   Nov. 2022 – Present
University of Alicante   *Remote*
MS, Acoustical Engineering   Sep. 2018 – July 2019
Technical University of Madrid   *Madrid, Spain*
BS, Electrical Engineering (Sound and Image)   Sep. 2014 – Jan 2019
Technical University of Madrid   *Madrid, Spain*

PUBLICATIONS

ISMIR 2024 - San Francisco (Paper, GitHub): Continual Learning for Music Classification

IBPRIA 2023 - Alicante (Paper, GitHub): Continual Learning for Document Image Binarization

SELECTED SKILLS

Languages: Python, SQL, HTML, JS
ML Frameworks: PyTorch, ONNX, TensorFlow, OpenCV, Scikit-Learn, Pandas, Streamlit, MLFlow, Dash
Deploy: Pydantic, FastAPI, Nvidia Triton, Google Cloud, AWS.
Deep Learning: CNNs, RNNs, Transformers, SSL, Continual Learning.
Data: optimization of data pipelines for maximizing GPU usage, data cleaning, data visualization