



Jaume Ivars Grimalt

RESEARCH ENGINEER · ML & COMPUTER VISION

Valencia, Spain -- Open to: London, Zurich, US

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Profile

ML Engineer with end-to-end experience building production computer vision systems from mathematical formulation to deployed applications. At a biotech startup, designed density estimation architectures from first principles, built training pipelines, and shipped complete ML-powered products (models + APIs + UIs). Strong theoretical foundations (computer vision in 2D and 3D, neural ODEs, mechanistic interpretability, loss landscape analysis) applied to real-world problems in microbiology and medical imaging where reliability is critical. Seeking Research Engineer roles to deepen expertise at the intersection of rigorous ML understanding and production systems.

Technical Skills

ML Engineering

PyTorch, NumPy, Scikit-learn, TensorFlow, Docker, Git, CI/CD

Applied Research

Semantic Segmentation, Attention Mechanisms, Density Estimation, U-Net Architectures, Medical Imaging, Object Detection, Backbone Architectures, Multi-scale Feature Extraction

Systems & Infrastructure

Python, TypeScript (Next.js, Nest.js, Prisma), Linux, GCP, AWS, PostgreSQL, MongoDB

Theoretical Interests

Mechanistic Interpretability, Neural ODEs, Normalizing Flows, GANs, Diffusion Models, Loss Landscape Analysis, Physics-informed NNs

Experience

Mycospace — Biotech Startup

Valencia, Spain

Jan. 2024 – Present

Co-FOUNDER & CTO

- Formulated the high-density colony counting problem (>300 overlapping colonies per plate) as a density estimation task and designed proprietary Density Map Regressors with bayesian priors.
- Designed and trained Object Detection models, achieving 95% median accuracy against expert microbiologist annotations.
- Built complete production system end-to-end: PyTorch training framework, data pipelines, containerized inference (Docker/GCP), REST APIs (NestJS/Prisma), and user-facing web application (Next.js/TypeScript).
- Curated domain-specific dataset of 3,500 annotated images across 12 microbial species; co-designed annotation protocols with microbiologists to ensure ground-truth integrity.
- Delivered full-stack ML product from concept to deployment, owning model design, training infrastructure, API development, database architecture, and frontend implementation.

MIALAB — Medical Imaging Analysis Laboratory, UPV

Valencia, Spain

May 2025 – Jan 2026

RESEARCH ENGINEER

- Trained and evaluated nnU-Net models for volumetric brain MRI segmentation, experimenting with different multi-scale feature extraction strategies.
- Contributed to optimizing the inference pipeline for the VolBrain platform (which contains 700k+ MRI volumes), analyzing bottlenecks in data flow from NIfTI ingestion to voxel-level predictions.
- Established systematic experiment tracking and modular code architecture, enabling reproducible ablation studies and standardized evaluation for the research group.

Neurocatching

Valencia, Spain

2022 – 2023

ML ENGINEER INTERN — INDUSTRIAL BACHELOR'S PROJECT

- Built ML models for temporal gaze-pattern analysis: extracted features from raw ocular movement sequences, designed predictive pipelines, and evaluated against behavioural ground truth.

Sciling

Valencia, Spain

2022

DATA SCIENCE INTERN

- Early exposure to large language models (GPT-2/3) and Diffusion Models; contributed to applied NLP and generative modelling projects.

Education

Universitat Politècnica de València (UPV)

Valencia, Spain

2023 – 2024

M.Sc. IN ARTIFICIAL INTELLIGENCE, COMPUTER VISION & DIGITAL IMAGE

- Grade: 8.7/10. Master's Thesis completed with Honours.
- Focus: Deep Learning Theory, Attention Mechanisms, Semantic Segmentation, Medical Image Analysis, Optimization.
- Class Delegate: Represented cohort in academic and administrative matters.

- Grade: 8.3/10. Honor Mentions in Machine Learning and Statistics (top 10% of class).
- Strong elective focus on mathematical foundations: Linear Algebra, Numerical Methods, Probability Theory, Discrete Mathematics.
- 5-time elected Class Delegate; coordinated remote learning during COVID-19 pandemic. Coordinator of VideoGame Development Club. ACM Student Member.

Honors & Awards

2024 **1st Prize, IdeasUPV Startup Competition**, MycroSpace — €10,000 grant for biotech innovation

Valencia, Spain

UPV, Valencia,

Spain

2024 **Master's Thesis with Honours**, M.Sc. in AI, Computer Vision & Digital Image (Grade: 8.7/10)

UPV, Valencia,

Spain

2023 **Honor Mentions in Machine Learning & Statistics**, B.Sc. in Computer Science (top 10% of class)