



+34 629860362

Barcelona

antonivalls@proton.me

in/antoni-valls-cifre

github.com/AntoniValls

Computer Skills

Advanced level
Python, R, Matlab, Linux, Git, LaTeX, CUDA, PowerBI, and Excel.

Also in a wide range of Deep Learning libraries, including PyTorch, Scikit-Learn, TensorFlow, OpenCV, NetworkX, and HuggingFace Transformers.

Medium level
C++, SQL, Fortran, LabVIEW, Slurm, ROS, AWS and Tableau.

Languages

English
Advanced

Italian
Beginner

Catalan and Spanish
Native

Personal Skills

- Problem solving
- Teamwork
- Critical thinking
- Good communicator
- Creativity

Reference

Jesus Cerquides
Scientific Researcher & Learning Systems
Department Head (IIIA-CSIC)
j.cerquides@csic.es

Antoni Valls

AI RESEARCH | COMPUTER VISION | DEEP LEARNING

About Me

AI researcher and engineer with a background in **theoretical physics and data science**, working on computer vision, visual localization, and vision-language models. Experienced across the full pipeline from model design to real-world deployment.

Work Experience

Robotic Engineer | IRI, CSIC - UPC

Barcelona. April 2025 - Present

- Participation in the SMARTGAZE II project with Biel Glasses, enhancing mobility for people with low vision through **AI-powered smart glasses**.
- Focused on **visual urban localization** in dynamic environments and adaptation of state-of-the-art models for precise navigation with and without GPS.
- First-authored a paper submitted to IEEE-ITS benchmarking **VLMs models for assistive navigation** in urban environments.
- Tools used: **Visual-Inertial Odometry, Multi-Modal Large Language Models, Feature Extraction & Matching, Segmentation Models, Depth Estimation, SfM and 3D Scene Reconstruction, Kalman Filters, GNSS Correction, and Graph Theory**.

Research Assistant | IIIA - CSIC

Barcelona. April 2024 - October 2024

- Co-authored an **NLP research project** on geopolitically-informed BERT-based models for propaganda detection, with results **published as an article**.
- Collaborated on a **computational sociology project** for my master's thesis, investigating the influence of link-prediction algorithms on social contagion models. Responsibilities include dataset collection, exploratory data analysis, coding **GNN models** (e.g., GCN, GAT, SEAL), developing diffusion algorithms, and compiling related research. Code, report, and presentation [here](#).
- Tools used: Natural Language Processing, Deep Learning, LLMs, Generative AI, Reinforcement Learning, Graph Neural Networks, Computational Sociology, and Data Analytics.**

IT Risk Advisory Consultant | Deloitte Advisory, S.L.

April 2022 - September 2022

Education and Training

MSc in Data Science | University of Padua

Padua. October 2022 - December 2024

- Curriculum in Machine Learning for Intelligent Systems.
- Skills: **Computer Vision**, CNNs, **OpenAI API**, Transformers, **NLP, LLMs**, and Variational Autoencoders (VAEs). Also Statistics, **Data Analytics and Visualization**.
- Master's thesis: "Exploring the Effects of Graph Neural Network-Based Link Prediction on Social Contagion Dynamics".

BSc in Theoretical Physics | Universitat de Barcelona

Barcelona. September 2017 - January 2022

- Honors in Linear Algebra and Geometry.
- End-of-degree project on **Nuclear Physics**: "Atomic and nuclear Ξ - bound states".