

JUAN A. RODRÍGUEZ

In Montréal, Canada or Barcelona, Spain

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EDUCATION

Mila - Quebec AI Institute / École de technologie supérieure (ÉTS) 2023 - 2027
Ph.D. in Computer Science

Universitat Autònoma de Barcelona (UAB) 2021 - 2022
M.Sc. in Computer Vision

- Grade: 8.54 (GP4 of 3.4)
- Thesis: *Text to Figure Generation*. Grade: A (master project award)
- Host universities: Universitat Pompeu Fabra (UPF), Universitat Politècnica de Catalunya (UPC), Universitat Oberta de Catalunya (UOC)
- Courses: Optimization Techniques, Machine Learning for Computer Vision, 3D Vision, Visual Recognition, and Video Analysis, among others.

Universitat Pompeu Fabra (UPF) 2016 - 2020
B.Sc. in Telecommunications Network Engineering

- Grade: 7.08 (GP4 of 2.8)
- Thesis: *Handwritten text recognition: A system to translate notes into digital text*. Grade: A

INDUSTRY AND RESEARCH EXPERIENCE

Mila - Quebec AI Institute / École de technologie supérieure (ÉTS) Sept 2023 - 2027
PhD Student *Montreal, Canada*

- Ph.D. in Multimodal Generative Models, advised by Prof. Marco Pedersoli and Prof. Chris Pal.

Servicenow Research Jan 2023 - Current status
PhD Student - Researcher *Montreal, Canada*

- Working with the Low Data Learning Research group, advised by Dr. David Vazquez, Dr. Issam Laradji, and Prof. Chris Pal.
- Worked in Generative Models for image and text generation (text to image, large language models, code generation)
- Worked on Document Intelligence, reducing by 97% the training time of document classification models on CPU.
- Developed research on Scalable Vector Graphics (SVG) Generation, resulting in the StarVector model.

Computer Vision Center (CVC), Universitat Autònoma de Barcelona (UAB) Nov 2022 - Jan 2023
Research Intern in Computer Vision *Barcelona, Spain*

- Working on generative models (GANs and Diffusion) at the LAMP research group, advised by Prof. Joost van de Weijer.
- Working in text-to-image and video generation using diffusion models.

Universitat Pompeu Fabra (UPF) Sept 2020 - April 2022
Research Intern in Computer Vision *Barcelona, Spain*

- Worked in building the NanoMoocs E-Learning platform
- Led the construction of an emotion prediction module to improve E-Learning experiences, using video facial analysis and deep learning

- Deployed the emotion prediction models and analysis tools into the nanomooocs.cat platform.

Aural Widex Audífonos

Business Intelligence Engineer

Jan 2018 - Sept 2020

Barcelona, Spain

- Business Intelligence developer, building data analysis tools for finance and product departments.
- CRM and ERP design and development.

ACADEMIC SERVICE

- Reviewing: ICLR 2024
- Supervision: Joan Fernandez (UPF undergrad)
- Teaching: Teaching Assistant for courses at UPF - Software Engineering for Web Applications (40 hours of labs and seminar sessions), Large Scale Distributed Systems (20 hours of lab sessions).

RESEARCH PUBLICATIONS

1. **FigGen: Text to Scientific Figure Generation.** Juan A. Rodríguez, David Vazquez, Issam Laradji, Marco Pedersoli, Pau Rodríguez. At **ICLR 2023, Tiny**
2. **OCR-VQGAN: Taming Text-within-Image Generation.** Juan A. Rodríguez, David Vazquez, Issam Laradji, Marco Pedersoli, Pau Rodríguez. At **WACV 2023 (Oral)**
3. **Affective State-Based Framework for e-Learning Systems.** Juan A. Rodríguez, Joaquim Comas, Xavier Binefa. At **CCIA 2021**

Preprints:

1. **StarVector: Generating Scalable Vector Graphics Code from Images.** Juan A. Rodriguez, Shubham Agarwal, Issam H. Laradji, Pau Rodriguez, David Vazquez, Christopher Pal, Marco Pedersoli

SKILLS

Languages: Spanish (native), Catalan (native), English (highly fluent, academic writing), French (basic) **Program-**

ming Languages: Python, Java, C++, C, Javascript, HTML

Technologies: PyTorch, Numpy, HuggingFace, Tensorflow, Keras, HPC-GPU Distributed Training, Linux, Docker, AWS, Azure, Nvidia NGC

Mathematical foundations: Vector Calculus, Linear Algebra, Probability, and Statistics.

Other Software Skills: Web Development, Git, Matlab, Latex.