

Mayalen Etcheverry

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RESEARCH INTERESTS

Curiosity-Driven Artificial Intelligence • Representation Learning • Automated Discovery in Science • Healthcare

EDUCATION

INRIA, [Flowers](#) team | Poietis

Bordeaux, FR

Ph.D. in Machine Learning, Advisor: Dr. [Pierre-Yves Oudeyer](#)

2020–Current

- Thesis: “Automated Discovery of Self-Organized Structures in Morphogenetic Systems”

University College of London (distinctions, GPA: 4.0/4.0)

London, GB

M.Sc. in Computer Vision, Computer Graphics and Imaging

2016–2017

- Thesis: “Making parametric models of buildings easier to edit by predicting future edit patterns in the Open3D platform”, Thesis Supervisor: Dr. [Paul Guerrero](#)

Télécom ParisTech, Top-ranked French school in digital technologies (GPA: 3.6/4.0)

Paris, FR

M.Eng. in Computer Graphics (major) and Data Science (minor)

2014–2017

B.Sc. in Computer Science

Engineering School Preparatory Classes (GPA: 3.8/4.0)

Bordeaux, FR

Undergraduate program in mathematics and physics to prepare the national competitive entrance exams to the *Grandes écoles*

2012–2014

R&D WORK EXPERIENCE

INRIA, in the [Flowers](#) project-team

Bordeaux, FR

Research Engineer, Supervisor: Dr. [Pierre-Yves Oudeyer](#)

2018 –2020

- Unsupervised Representation Learning for Intrinsically-Motivated Exploration of Complex Systems.
- Development of a modular and dynamic network architecture where a hierarchy of behavioral characterization spaces is progressively constructed, allowing flexible representations and intuitive guidance during the discovery process.

Siemens Healthineers

Princeton, USA

Research Scientist Intern, Supervisor: Dr. [Bogdan Georgescu](#)

2017-2018

- Deep Learning for organ segmentation in 3D CT Scans: responsible for implementing the preprocessing/training/evaluation pipeline for 10 organs. Practical Experience with Large Databases.
- Research and development of a deep reinforcement-learning algorithm for localizing anatomical structures in 3D images.

PUBLICATIONS

- [1] **M. Etcheverry**, C. Moulin-Frier, and P.-Y. Oudeyer, “Hierarchically organized latent modules for exploratory search in morphogenetic systems”, *Neural Information Processing Systems (NeurIPS)*, 2020.
- [2] C. Reinke*, **M. Etcheverry***, and P.-Y. Oudeyer, “Intrinsically motivated discovery of diverse patterns in self-organizing systems”, in *International Conference on Learning Representations (ICLR)*, 2020.
- [3] **M. Etcheverry**, B. Georgescu, B. Odry, T. J. Re, S. Kaushik, B. Geiger, N. Mariappan, S. Grbic, and D. Comaniciu, “Nonlinear adaptively learned optimization for object localization in 3d medical images”, in *Deep Learning in Medical Image Analysis and Multimodal Learning for Clinical Decision Support*, Springer, 2018, pp. 254–262.

WORKSHOP PAPERS AND ABSTRACTS

- [4] **M. Etcheverry**, P.-Y. Oudeyer, and C. Reinke, “Progressive growing of self-organized hierarchical representations for exploration”, *ICLR Workshop - Beyond “Tabula Rasa” in Reinforcement Learning (BeTR-RL)*, 2020.
- [5] **M. Etcheverry**, B. Georgescu, B. Odry, T. J. Re, S. Kaushik, B. Geiger, N. Mariappan, S. Grbic, and D. Comaniciu, “Nonlinear adaptively learned optimization for object localization in 3d medical images”, *NeurIPS Workshop - Medical Imaging Meets NeurIPS (MED-NeurIPS)*, 2018.

PATENTS

- [6] **M. Etcheverry**, B. Georgescu, S. Grbic, D. Comaniciu, B. L. Odry, T. Re, S. Kaushik, B. Geiger, and M. S. Nadar, *Adaptive nonlinear optimization of shape parameters for object localization in 3d medical images*, US Patent App. 16/270,918, 2019.

ACADEMIC PROJECTS

See full list of projects and corresponding resources [here](#).

- Open-Innovation Program ([FIRST](#), 2016)
Selected and coached by BNP-Paribas, Orange and Nokia.
Interdisciplinary team of engineers, designers and managers.
Designed and implemented an interactive Runner Game in **C++/OpenGL**. Tracking of the player’s finger with infrared LED.
Project was displayed at Paris Center for digital creation.
- M.Sc. Final Research Project (May-Sep 2017)
Learning edit patterns of a procedural model’s parameters to assist in modeling buildings in the [Open3D](#) platform.
(**C++/Eigen/QT**).
- M.Sc. main projects (2017)
 - **Vision**: Segmentation, panoramas, tracking systems, dense stereo, 3D reconstruction, visual SLAM (**Matlab**)
 - **Image/Video**: Poisson Editing, NLM, restoration of old films, multiview video textures (**Matlab**)
 - **3D Geometry**: ICP, Smoothing (**C++/Eigen/OpenGL**)
- Inverse Kinematics (Team of 4, June 2016)
 - IK system to predict the most likely 3D body pose given a set of constraints, learned model of human poses.
 - Tool to visualize the resulting animations (**QT/OpenGL**).

SKILLS

- **Programming**:
 - Python, PyTorch
 - C / C++, OpenGL, GLSL
 - Matlab, Qt
 - Flask, HTML, CSS, JavaScript
 - Git
- **Typesetting**: LaTeX
- **Operating Systems**: Linux / macOS

LANGUAGES

- **French**: native speaker
- **English**: advanced
 - **TOEFL**: score of 102/120
- **Spanish**: advanced
 - **OIB**: International Option Baccalaureate with Honors
- **Serbo-Croatian**: elementary

EXTRACURRICULAR ACTIVITIES

- Co-founder of the video association of Telecom ParisTech 2015 –2016
Film realisations and projection events attended by all the students. Now taken over by [other students](#).
- Realisation of a poster about gender stereotypes Spring 2016
*National competition for all Grandes écoles students to reflect on persistent stereotypes.
Won the jury “[coup de coeur](#)” prize.*
- Mathematics private classes to high-school student girls 2016–2018