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Summary

Born in Barcelona (Spain) and currently living in Montreal (Canada) as I pursue my Research MSc at the Mila Quebec AI Institue and the University of Montreal under supervision of Professor Glen Berseth. Member of the Robotics and Embodied AI Lab (REAL). My research interests are on developing generalist problem-solving autonomous agents. I have been actively engaged in AI research since my undergraduate: I have 5+ peer-reviewed publications, experience in conferences, and a strong sense of autonomy. **Anticipated graduation date**: September 2024
Coding languages proficiency: Python, C++, C#, MATLAB

Experience

Research Intern **Ubisoft LaForge** **Montréal, Canada; Ju.2023-Aug.2023**
- Research on improving convergence of intrinsic exploration algorithms with deep reinforcement learning.
- Integration of AI agents in 3D games for human-like navigation in complex environments and advanced exploration skills.

Junior Data Scientist **HP Inc** **Barcelona, Spain; Feb 2021-Aug 2022**
- Development of machine learning models to assess the performance of online marketing campaigns and provide business recommendations.
- Design and implementation of a massive optimization framework for automated optimal budget allocation.
- Deployment of an interactive web application based on a Flask server (back-end), HTML + Bulma CSS + JavaScript (front-end), and PostgreSQL (database) to empower stakeholders to interact with the trained machine learning models.

Research intern **Universitat Politecnica de Catalunya** **Barcelona, Spain; June 2021-Oct 2021**
- Research on Software Engineering for Artificial Intelligence in the GESSI research group at UPC sponsored by a research scholarship provided by Banco Santander. Publication at the Empirical Software Engineering (EMSE) journal.
- Implementation and deployment of convolutional and recurrent neural networks in mobile applications to solve vision and language-based problems. Evaluation of the impact of the AI-related design decisions with respect to the green characteristics of the AI-enabled mobile applications.

Education

Research MSc in Computer Science/AI **Mila Quebec/University of Montreal** **Montreal, Canada; Sep 2022-Present**
- Research scholarship sponsored by Mila. **GPA: 4.225/4.3**
- The core objectives of my research are at the intersection of reinforcement learning and the quest for creating more capable and versatile agents. Particular interest in unsupervised reinforcement learning and its applications to open-ended environments. How can we train autonomous agents that master a wide range of skills and are able to adapt to new environments?
- Specific Interests: Exploration & Intrinsic Motivations, Skill Learning, World Models, Open-Eendedness, Representation Learning, Information Theory.

BSc in Data Science and Engineering **Universitat Politecnica de Catalunya** **Barcelona, Spain; Sep 2017-June 2021**
- Undergraduate studies in the highly competitive BSc in Data Science and Engineering.
- I developed a strong mathematical background and obtained advanced skills in data analysis as well as expertise in machine learning, deep learning, and reinforcement learning.

Publications

For more details on my research/projects/talks please see my webpage and Google Scholar
- *Improving Intrinsic Exploration by Creating Stationary Objectives*; **ALOE @ NeurIPS 2023**
- *Surprise-Adaptive Intrinsic Motivation for Unsupervised Reinforcement Learning*; **IMOL @ NeurIPS 2023 (Oral)**
- *Unsupervised skill-discovery and learning in Minecraft*; **Unsupervised Reinforcement Learning workshop @ ICML 2021**.
- *Centralized Control for Multi-Agent RL in a omplex Real-Time-Strategy Game*; **Pre-print**.
- *PixelEDL: Unsupervised skill-discovery and learning from pixels*; **Embodied AI workshop @ CVPR 2021**.
- *PiCoEDL: Discovery and learning of Minecraft navigation goals from pixels and coordinates*; **Embodied AI @ CVPR 2021**.
- *Integration of convolutional neural networks in mobile applications*; **Workshop on AI engineering @ ICSE 2021**.
- *Which design decisions in AI-enabled mobile applications contribute to greener AI?*; **Journal publication @ ESEM 2022**.
- *Sequence-to-Sequence modelling for RDF triples to natural text*; **WebNLG 2020**.
- *Machine translation datasheets for datasets*.