Adrià López Escoriza

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EDUCATION

ETH Zürich — Sep. 2021 – April 2024

MSc Robotics, Systems & Control (RSC), GPA: 5.8/6 (Distinction) — *Zürich, Switzerland*

- Relevant Courses: Large Language Models, Machine Perception, Game Theory and Control, Deep Learning, Planning and Decision Making, Vision Algorithms for Mobile Robotics.
- Master's Thesis: CoT World Models for Goal-Conditioned RL.

Universitat Politécnica de Catalunya — Sep. 2017 – July 2021

BSc in Telecommunications Engineering (ETSETB) — *Barcelona, Spain*

- Bachelor Mobility Program at Electrical Engineering (ITET) Department of ETH Zürich.
- Total Credits ECTS of the program: 240. All credits obtained on first call.
- Main focus on signal processing, communication systems and electronic control.
- Honours in: Physics, Electromagnetism, Signals & Systems, Radiation & Propagation, Audiovisual & Communications Signal Processing & Bachelor's Thesis.

RELEVANT EXPERIENCE

Boston Dynamics AI Institute — Jan. 2025 – July 2025

AI Institute | Research Internship, Data-Driven Planning, Humanoids — *Zürich, Switzerland*

- Research Internship advised by Prof. Marco Hutter.
- Working on data-driven planning and state estimation.

World Models for Sparse Rewards — June 2024 – Dec. 2024

SU Lab, UCSD | Research Internship, Reinforcement Learning, World Models — *San Diego, USA*

- Research Internship on Data-Driven RL advised by Prof. Hao Su
- Proposed a framework for model-based RL for long-horizon tasks with sparse rewards. The work has been submitted to ICML 2025.
- Co-authors: Nicklas Hansen, Tongzhou Mu, Stone Tao, Hao Su

Chain of Thought World Models for RL — Aug. 2023 – April 2024

VIS, CVL, ETH | Master Thesis, Reinforcement Learning, Visual Intelligence — *Zürich, Switzerland*

- Master Thesis advised by Prof. Fisher Yu.
- Designed a CoT World Model, capable of short-term prediction and key frame forecasting.
- Develop a goal-conditioned reinforcement learning framework capable of hierarchical planning.

Motion Planning Intern — Sep. 2022 – April 2023

Motional | Autonomous driving, High-level Planning — *Singapore, Singapore*

- Working on convex corridor generation and witness verification.
- Benchmarked the pre-existing planning pipeline to find bottlenecks in scenarios with several dynamic obstacles.
- Prototyped and tested new corridor generation pipeline capable of a wider range of maneuvers.

GPS Waypoint following — March 2022 – July 2022

Ascento, ETH | State estimation, Control, ROS — *Zürich, Switzerland*

- Developed a full autonomous pipeline for carrying out waypoint following missions.
- Sensor fusion of odometry and GPS measurements and control algorithm in ROS.

Data-Driven State Estimation — Sep. 2020 – Sep. 2021

AMZ Driverless | Autonomous Racing, Velocity Estimation, Python, C++ — *Zürich, Switzerland*

- Design and implementation of state of the art Kalman Filter for ego motion estimation at high speed conditions.
- Implantation of safety and redundancy systems for low level autonomous system control in a driverless racing car.
- 1st place in Daimler AI Award for having the most innovative and practical AI solutions for autonomous driving.
- 3rd overall place in Driverless category + 2nd place in design category at Formula Student Germany.

Simultaneous Localization And Mapping — Sep. 2019 – Sep.2020

BCN eMotorsport | Autonomous Racing, SLAM, ROS, C++ — *Barcelona, Spain*

- Part of the first Formula Student Driverless team in Spain.
- Designed an online SLAM system from LiDAR observations and raw GPS data.
- SLAM algorithm deployed and tested leading to the first ever mapping algorithm implemented in a Spanish autonomous car.

Publications

[KNet for Velocity Estimation](#) | *Autonomous driving, Velocity Estimation*   Feb. 2021 – Aug. 2021
- Published at the International Conference on Autonomous Systems ([ICAS](#)) 2021.
- Work done in collaboration with the Signal and Information Laboratory ([ISI](#)) at ETH Zurich and [AMZ Driverless](#).
- Implementation of KalmanNet in a real autonomous racing car with the intention to simplify the sensor setup.
- Deployment of KalmanNet in an ETAS Electronic Control Unit embedded in the autonomous race car.

[KalmanNet](#) | *State estimation, Deep learning, RNNs*   Sep. 2020 – June 2021
- Published in Transactions of Signal Processing ([TSP](#)) - 250+ citations.
- Contributed in the development and evaluation of a learning based approach to non linear state estimation.
- Comparing the system vs traditional state estimation techniques such as Extended Kalman Filter.
- Semester Project in the Signal and Information Laboratory ([ISI](#)) at ETH Zurich.

Awards & Fellowships

[La Caixa Felowships 2024](#): Fully funded scholarship to carry out a PhD program at any institution. The fellowship all research-related expense including tuition fees and stipend. Only awarded to 100/2000 candidates per year.
Formula Student Germany 3rd place overall: Driverless category with AMZ Driverless.
[Daimler AI Award](#) 1st place: Best use of AI algorithms for autonomous driving.
XXIV National Mathematics Olympiad Champion: 1st place in [Spanish Mathematics Olympiads](#) group cathegory.
Andorra Mathematics Olympiad Champion: 1st place in [Andorran Mathematics Olympiads](#).

Relevant Course Projects

Machine Learning: Bayesian Neural Networks for medical diagnosis. Bayesian Optimization for neural network design. Actor Critic RL agent for moon lander simulation.
Computer Vision: Transformer-based 3D human pose recognition. Visual odometry pipeline for vehicle localisation. Disentangling controls in GANs via kernel PCA for image synthesis.
Natural Language Processing: Theoretical study on LLM capabilities. Performance analysis of different models on reasoning tasks (GSM8K dataset).
Motion Planning: Planning + Control of a bi-thrust spacecraft in a virtual dynamic environment. Dynamic programming for drone delivery in stochastic state space. MPC for autonomous driving.

Technical Skills

Programming Languages: C++, Python, C, Java (Beginner)
Relevant Frameworks: PyTorch, Jaax, ROS, Eigen, WandB
Other Tools: Git, Bazel, CMake, Kubernetes, Docker

Language Skills

Spanish, Catalan: Native Speaker   **English**: C2 level   **French**: C1 level   **Italian**: B2 level

Extracurricular experience

Teaching Assistant   Sep. 2023 – Jan. 2024
[Automatic Control Lab](#) (ETH) | Teaching Assistant for the course Game Theory And Control   *Zürich, Switzerland*
Primary School Robotics Teacher   Sep. 2018 – July 2019
[CreaTic Academy S.L.](#) | Robotic workshops for students aged from 8 to 14   *Barcelona, Spain*
Construction volunteer   June 2018 – Aug. 2018
[Vertical Ascent](#) | Construction of an orphanage in the outskirts of Pokhara   *Sarangkot, Nepal*

Other Courses

Imperial College of London   June 2017 – July 2017
Physics pre-college course   *London, UK*

University of California Los Angeles (UCLA)   June 2016 – July 2016
Debate and Public speaking   *Los Angeles, CA*

Interests and hobbies

Alpine skiing, Alpinism, Tennis, Surfing, Backpacking