

THÉO MORALES

PhD student in Deep Learning & Computer Vision

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EXPERIENCE

Computer Vision engineer (R&D)

Dopi / Cisteme / XLIM

November 2019 – June 2020 Niort, FR

- Design and implementation of multi-object tracking algorithms
- Real-world projection of points in real-time
- Fusion of trajectories with re-identification from multiple overhead cameras
- Design and implementation of the networking protocol
- Design of a palette positioning system using overhead cameras in real time

Research assistant

Aarhus University - Artificial Intelligence in Robotics group

July 2019 – October 2019 Aarhus, DK

- Writing a paper in autonomous drone racing for IJCNN 2020
- Developing ROS nodes and assisting for the research group

Part-time software developer

Trifork

November 2017 – June 2019 Aarhus, DK

- Modern web development (AngularJS, TypeScript, ReactJS, etc.)
- iOS development (Swift)
- Agile, TDD, Continuous Integration

Part-time software developer

Asimut Software

August 2016 – September 2017 Aarhus, DK

- Back-end web development in modern PHP & JS
- Implementing custom features for prestigious music academies

PROJECTS

Online adaptation for hand grasp prediction on unseen objects

Trinity College Dublin

4 years Dublin, Ireland

PhD thesis on improving the accuracy of hand pose prediction in hand-object manipulation sequences for unseen objects. To address this challenge, I am exploring test-time adaptation, self-supervision and learnable object priors.

MY LIFE PHILOSOPHY

“What I cannot create, I do not understand.” - Richard P. Feynman

STRENGTHS

C/C++ Python Go Java
Meta-Learning Linux PyTorch

LANGUAGES

English ●●●●●

French ●●●●●

Spanish ●●●●●

EDUCATION

Ph.D. Computer Science

Trinity College Dublin

September 2020 – September 2024

Machine Learning, Meta-Learning, Computer Vision, Pose Estimation, Online Adaptation

M.Sc. Computer Engineering

Aarhus University

August 2017 – June 2019

Machine Learning, Signal Processing, Computer Vision, Embedded Real-Time Systems

B.Sc. Information & Communication Technology

VIA University

August 2016 – June 2017

DUT/DUCTI - ICT Engineering

IUT La Rochelle / VIA University

September 2013 – June 2016

Undergraduate IT diploma in Embedded Systems & Signal Processing

Synthetic images for convolutional neural networks in autonomous drone racing

Aarhus University

📅 1 semester

📍 <https://tinyurl.com/y2jhasds>

Master's thesis in autonomous drone racing with focus on the vision and perception. Design of a hybrid dataset generation pipeline and experimentation with different state-of-the-art CNN models and regularization techniques.

MOST PROUD OF

🏆 Patent pending on a Palette Positioning System in 3D world coordinates, based on image processing and trajectory analysis of forklifts in real time for a network of overhead cameras.

LIST OF PUBLICATIONS

- 📖 **WCCI 2020 Congress - IJCNN 2020 conference**
Image Generation for Efficient Neural Network Training in Autonomous Drone Racing
([10.1109/IJCNN48605.2020.9206943](#))
- 📖 **NeurIPS 2022 - DistShift workshop**
A new benchmark for group distribution shifts in hand grasp regression for object manipulation. Can meta-learning raise the bar?([arXiv:2211.00110](#))
- 📖 **IMVIP 2022**
Sign2Speech: A Novel Sign Language to Speech Synthesis Pipeline
([10.56541/CTDH7516](#))
- 📖 **CVPR 2023 - OmniCV workshop**
ODIN: An OmniDirectional INdoor Dataset Capturing Activities of Daily Living From Multiple Synchronized Modalities
([10.1109/CVPRW59228.2023.00690](#))