CYPRIEN RUFFINO

R&D Engineer in Machine Learning

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EMPLOYMENT

R&D Engineer: Multimodal imagery and robust methods for the safety and security of autonomous driving systems

LITIS Laboratory, INSA de Rouen

May 2021–April 2022

- Industrial partnerships wih Peugeot S.A (Stellantis) and IRT SystemX
- Development of deep-learning modality fusion algorithms for polarimetric imaging
- Adversarial attacks and defenses with provable safety guarantees for deep learning-based autonomous driving systems
- On-road tests of real-time systems in Normandy and Paris

PhD thesis: Auxiliary tasks for the conditioning of Generative Adversarial Networks

LITIS Laboratory, INSA de Rouen

October 2017–April 2021 — Supervisors: Pr. G. Gasso, R. Hérault

- Conditioned data generation with Generative Adversarial Networks
- Multi-obective training of Generative Adversarial Networks, integration of domain-specific constraints
- Collaboration with SCK.CEN (Belgium): generative models for underground flow prediction applied to nuclear energy safety
- Image modality transfer and polarimetric imaging with generative models for road-scene object detection in adverse conditions

Research internship: Applied machine learning

LITIS Laboratory, Normandie University

April – October 2017 — Supervisor: Pr. T. Paquet

- Industrial partnership with Hamelin SAS for Oxford Notebooks
- Deep learning for offline handwritten text recognition on Android devices with Convolutional LSTMs

Research internship: Computability theory and app development

Laboratoire d'Informatique Fondamentale d'Orléans (University of Orléans)

April–June 2015 — Supervisor: Pr. N. Ollinger

- Theoretical works on SMART (Small Minimal Aperiodic Reversible Turing machine) and development of a cross-platform visualisation application of SMART for computability theory researchers in OpenFL

FEATURED PUBLICATIONS

1. Pixel-wise Conditioned Generative Adversarial Networks for Image Synthesis and Completion, **Cyprien Ruffino**, Romain Hérault, Eric Laloy, Gilles Gasso *In Neurocomputing, 2020*
2. Gradient-based deterministic inversion of geophysical data with generative adversarial networks: Is it feasible? Eric Laloy, Niklas Linde, **Cyprien Ruffino**, Romain Hérault, Gilles Gasso, Diedrik Jacques *In Computers and Geosciences, 2019*

EDUCATION

PhD in Machine Learning

2017-2021 — INSA de Rouen

BSc and MSc in Software Engineering

2012-2017 — Université d'Orléans
Ranked 1st/43

SKILLS

English — European Level C2
French — Native speaker

Python
Java
C/C++

TensorFlow
Keras

Generative models
Deep learning
Computer vision

Numpy | Scikit-learn | Matplotlib

SQL | Linux | Git | Docker | SLURM

SOME PROJECTS

CTCModel

Maintainer

Easy-to-use CTC implementation in Keras

Albert Launcher

Contributor

Keyboard launcher for Linux, in C++/Qt

MISCELLANEOUS

- PhD students' representative, voting member of the LITIS lab council, 2018–2020
- President of the IT students' association, 2015–2016
- Supervisor for 3 master's students' internships, 2019
- System administrator of GPU servers at LITIS, 2018–2021

AND ALSO...

- Hobbyist homebrew developer (PS Vita)
- Amateur lockpicker and bass player