

Nicolas Carrara, Ph.D.

Curriculum Vitae

PERSONAL DATA

📍 Toronto, Canada
☎ +33 651285392
✉ nicolas.carrara1u@gmail.com
👤 ncarrara.fr
🌐 github.com/ncarrara

PROFESSIONAL EXPERIENCE

MARCH 2020 – PRESENT

University of Toronto, Toronto, Canada
Post Doctoral Fellow

Deep Reinforcement Learning (DRL) for traffic control. Including **Multi-Agent** (MA) and **Transfer Learning** (TL).

OCTOBER 2015 – DECEMBER 2019

Orange Labs, Lille 1 and CRISAL, Lille, France
Ph.D.

Reinforcement learning (RL) for dialogue systems optimization with user adaptation. Including DRL, **safe RL**, and TL.

JULY 2019

RLSS, Lille, France
Teaching Assistant

Helping during lab sessions of the Sequel's RL Summer School 2019 (first edition).

2017 – 2019

Université de Lille, Lille, France
Teaching Assistant

Teaching diverse topics including: **RL**, Web Design, Algorithms, Regular Expressions, Linux etc.

MARCH 2015 – AUGUST 2015

INRIA, Nancy, France
Research intern

Master thesis : automated planning under uncertainty with multiple objectives.

JUNE 2014 – AUGUST 2014

INRIA, Nancy, France
Research intern

Improvements of a new dynamic neural field model: Randomly Spiking Dynamic Neural Fields (RSDNF).

JANUARY 2014 – MAY 2014

INRIA, Nancy, France
Research project

Initiation to research, course project: user prediction on the web using Monte Carlo Markov Chains (MCMC).

JUNE 2013 – AUGUST 2013

INRIA, Nancy, France
Research intern

Java and Android developer for a Dynamic Neural Field framework.

2014

Université de Lorraine, Nancy, France
Tutor

I tutored university freshmen in computer science. Mainly in algorithms and programming languages.

2012

Pokerstrategy.com
Voluntary judge

Coaching poker players.

EDUCATION

2019 **Ph.D.**

COMPUTER SCIENCE
Université de Lille, France

2017 **Summer School LxMLS 2017**

MACHINE LEARNING AND NATURAL LANGUAGE PROCESSING
Instituto Superior Técnico, Portugal

2015 **MSc, head of the class, magna cum laude.**

IPAC: MACHINE LEARNING, DATA MINING, ROBOTICS, IMAGE RECOGNITION
Université de Lorraine, France

2014 **MSc, magna cum laude.**

COMPUTER SCIENCE
Université de Lorraine, France

2013 **BSc, cum laude.**

COMPUTER SCIENCE
Université de Lorraine, France

COMMUNICATION SKILLS

FRENCH Fluent
ENGLISH Fluent

COMPUTER SCIENCE SKILLS

GOOD LEVEL Python (Tensorflow 2.0, Pytorch, Numpy, matplotlib)
INTERMEDIATE \LaTeX , Java, Javascript, Linux, Git, C, Tensorflow 1.0, RegEx.
BASIC KNOWLEDGE HTML, CSS, MySQL, MongoDB.

PROJECTS

GYM PYDIAL An api to use Pydial as a **Gym Environment** [code].
AGE OF TRIGGERS An api to make custom scenarios programmatically on Age of Empire Definitive Edition [code].
LADYBUG An Arduino project to create **an autonomous UAV** from scratch with Reinforcement Learning [code].

REVIEWING

2021 AAAI
2020 IEEE L-CSS, ECML-PKDD, MLJ

TALKS

2019 Presenting [1] at Amazon (Vancouver), Huawei (Paris) and Ford/West Virginia University (remote).

PUBLICATIONS [GOOGLE SCHOLAR]

- [1] Nicolas Carrara, Edouard Leurent, Romain Laroche, Tanguy Urvoy, Odalric Maillard, and Olivier Pietquin. Budgeted reinforcement learning in continuous state space. *Neural Information Processing System (NeurIPS)*, 2019.
- [2] Nicolas Carrara. *Reinforcement learning for Dialogue Systems optimization with user adaptation*. Ph.d. thesis, Ecole Doctoral Science pour l'Ingénieur Université Lille Nord-de-France, December 2019.
- [3] Nicolas Carrara, Romain Laroche, and Olivier Pietquin. Online learning and transfer for user adaptation in dialogue systems. In *SIGDIAL/SemDial joint special session on negotiation dialog, (SemDial)*, 2017.
- [4] Nicolas Carrara, Romain Laroche, Jean-Lon Bouraoui, Tanguy Urvoy, and Olivier Pietquin. A fitted-q algorithm for budgeted mdps. In *Workshop on Safety, Risk and Uncertainty in Reinforcement Learning, Uncertainty in Artificial Intelligence (UAI)*, 2018.
- [5] Nicolas Carrara, Romain Laroche, Jean-Lon Bouraoui, Tanguy Urvoy, and Olivier Pietquin. Safe transfer learning for dialogue applications. In *6th International Conference on Statistical Language and Speech Processing (SLSP)*, 2018.
- [6] Nicolas Carrara, Romain Laroche, Jean-Lon Bouraoui, Tanguy Urvoy, and Olivier Pietquin. A fitted-q algorithm for budgeted mdps. In *European Workshop on Reinforcement Learning (EWRL)*, 2018.