

Florian Strub

PhD Student in Machine Learning

295 rue Leon Gambetta
Lille, 59000- France
✉ florian.strub@gmail.com
🌐 [fstrub95](#)

Summary

I am Ph.D. Student in Machine Learning, specialized in Deep Reinforcement Learning for dialogue systems. Pro-active, open-minded and fast-learner, I am willing to collaborate on new research projects that involve Reinforcement Learning, Language understanding or Vision. I am accustomed to working within international environments having teamed up with people in Rep .of Korea, UK, Canada, Hong-Kong, and France. I am also an experienced C++/Python software developer with strong team-working abilities and acknowledged proficiency in challenging environments.

PhD thesis

Title *Deep sequential learning and its application to human-robot interaction*

Supervisors Olivier Pietquin, Jeremie Mary

Affiliation University of Lille1, Inria, CRISAL Laboratory, Sequel Team

Date January 2016 to December 2018

Description My research project explores how to enable computers to acquire language through multimodal interactions. Therefore, I focus my work on goal-oriented visually grounded dialogues. I am both developing new neural architectures to fuse vision and language modalities, and I am extending deep reinforcement learning methods to fit the dialogue setting. Finally, I am also studying dialogues from a multi-player Markov game perspective to develop new training algorithms.

Ph.D Visiting Ph.D Visitor at Universisty of Montreal - MILA during 6 months. Multiple collaborations on Language, Vision and Reinforcement Learning with four joint papers.

- Misc.
- Workshop organizer at NIPS 2017 (Long Beach, US): "Visually grounded interaction and language"
 - Volunteer at EWRL 2016 (NIPS - Barcelona, Spain)
 - Local organizer at ICML 2015 (Lille, Fr.). In charge of advertising sponsors and coordinate volunteers

Education

2011–2012 **MSc in Advanced Computing**, *Imperial College of London*, *Distinction - Top 10%*.

Advanced Machine Learning, Bayesian Networks and Probabilistic Inferences, Software Engineering, Multi-Agent Systems, Computational Finance, Advanced Computational Neurodynamic

2009–2011 **Joint Master in Engineering and Management**, *École Nationale Supérieure des Mines de Saint-Étienne*, *First class honor - Top 10%*.

Advanced Algorithms, Probabilistic Mathematics, Electrical Engineering, Software Development, Database, Web Programming, Project Management, Communication, Economics, Labor law, Psychology
Double Diploma: Research Master in Web Intelligence from University of Jean Monnet

Publications

- 2017
- H. de Vries, **F. Strub**, S. Chandar, O. Pietquin, H. Larochelle, A. Courville, *GuessWhat?! Visual object discovery through multi-modal dialogue*. In Proc. of CVPR (2017) - [Spotlight](#).
 - **F. Strub**, H. de Vries, J. Mary, B. Piot, A. Courville, O. Pietquin *End-to-end optimization of goal-driven and visually grounded dialogue systems*. In Proc. of IJCAI (2017)
 - H. de Vries*, **F. Strub***, J. Mary, H. Larochelle, O. Pietquin, A. Courville *Modulating Early visual Processing by language*. In Proc. of NIPS (2017) - [Spotlight](#).
 - J. Pérolat, **F. Strub**, B. Piot, O. Pietquin, *Learning Nash Equilibrium for General-Sum Markov Games from Batch Data*. In Proc. of AISTAT (2017).

*Equal Contribution

- E. Perez, H. Vries, **F. Strub**, V. Dumoulin, A. Courville, *Learning Visual Reasoning Without Strong Priors*. In ICML Speech and Language Processing Workshop (2017).
- **F. Strub**, J. Mary, R. Gaudel, *Hybrid Recommender System based on Autoencoders*. In Proc. of Recsys workshop DLRS (2017)
- 2015 ○ **F. Strub**, J. Mary, P. Preux, *Collaborative Filtering with Stacked Denoising Autoencoders and Sparse Inputs*. In NIPS Workshop on Machine Learning for eCommerce. (2015).

Awards

- 2013 **Special Reward for outstanding social involvement and excellent academic records.**, delivered by Committee of *École des Mines de Saint-Étienne*.
- 2011 **National Scientific Student Project Award**, delivered by *Claudie Haigneré* on behalf of *CNOUS* at *Palais de la Découverte* for promoting Science through robotics to children.

Computer skills

Machine Learning	Deep Learning, Reinforcement Learning, Dialogue Systems, Recommendation Systems, Computer Vision, Bandit, Natural Language Processing
Prototyping	Python/TensorFlow, Lua/Torch, Matlab, Prolog, Tcsh/Bash
C++	C++11/14, STL, Boost, CMake/Makefile, Valgrind/CallGrind, GDB, Visual Studio

Experience

- 2015-2016 **Data Scientist**, *INRIA - Sequel, Lille*.
I worked on online recommendation systems and collaborative filtering. The project aims at computing non-linear SVD through autoencoders while incorporating meta-information to alleviate the cold start problem.
- 2013-2015 **C++ Software developer in Finance, Front Office**, *Société Générale, Paris*.
I implemented a high frequency trading API for low latency automats. It connects trading automats to worldwide markets and verified billion of trades (Stock, Future, Option) a day while forwarding them to the market in a few microseconds. As a technical leader, I was in charge of developing, testing and releasing the API.
 - Designed and developed from scratch an API for High Frequency trading following business requirements
 - Provided technical support for IT Quants and Traders: Support Level 2 and 3
 - Maintained and refactored a 300k line codebase inside a team of 30 developers.
 - Developed a platform of test (Test Driven development) to sustain continuous deliveries.
 - Integrated sensitive features to the API dealing with official market regulations, trade monitoring, KPI etc.
- March 2012 – **Research Assistant (Master thesis)**, *Imperial College, London*.
August 2012 I improved an expert system helping doctors in providing accurate diagnoses. My research project was based on Argumentation Based Assumption (ABA) theory developed by Francesca Toni and Robert Craven.
- May 2011 – **Research Assistant (Internship)**, *KAIST – RCV Laboratory, Daejeon – Rep. of Korea*.
September 2011 I developed a web platform to promote researchers' works. It enabled users to test cutting edge-algorithm in computer vision by uploading their pictures.

Social Involvement

- 2014–2017 **Co-founder and General Secretary of Senior High School Alumni Union**, *Lycée Jean Monnet, Franconville*.
- 2009–2012 **Co-founder and President of Robotic Union**, *École Nationale Supérieure des Mines, Saint-Étienne*.
The union (Min'bot) aimed to promote Science through Robotics and to support postgraduate's Robotic projects.
 - Organized two scientific and pedagogic events for 200 children in 2011 and 2012
 - Set the initial legal framework of the Union: Official Declaration, Bank accounts etc.

Interests

Sport	Climbing, Hiking, Caving, Boxing and Fencing.
Backpacking	Peru, China, Malaysia, Poland, India, Australia, Senegal, Japan, Algeria.
Theater	Actor for seven years and stage director for two years. Performed a dozen of plays.