

# Dylan Bourgeois

US & French citizen

04/11/94

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## education

09/2016  
04/2019 Master of Science & Engineering /speciality Robotics + extra credits in Computational Neuroscience, EPFL

09/2012  
06/2016 Bachelor of Science & Engineering /speciality Microengineering, EPFL

06/2012 French Baccalaureate, Scientific specialization & advanced Maths *summa cum laude*

## can speak...

proficiency mother tongue English  
mother tongue French  
fluent Spanish

## publications

**Learning Representations of Source Code from Structure & Context**  
Bourgeois, Catasta, Leskovec  
TBA

**A dynamic embedding model of the media landscape**  
Rappaz\*, Bourgeois\*, Aberer  
WWW'19

**GNNExplainer: Generating Explanations for Graph Neural Networks**  
Ying, Bourgeois, You, Zitnik, Leskovec  
pre-print

**Selection Bias in News Coverage: Learning It, Fighting It**  
Bourgeois\*, Rappaz\*, Aberer  
WWW'18

**Using holistic information in the Trigger**  
Bourgeois, Fitzpatrick, Stahl  
LHCb Pub

**New approaches for track reconstruction in LHCb's Vertex Locator**  
Hasse, Albrecht, Couturier, Bourgeois, Coco, Nolte, Ponce  
JHEP'18

## currently

09/2018 MSc Thesis

07/2019 @ SNAP, Stanford / LTS2, EPFL

Designing a new encoder which learns representations of source code from structure and context. The model can then be fine-tuned to achieve state-of-the-art results on common tasks like naming variables or methods. After a successful defense with honors, this work is currently being pursued for publication and extended with other collaborations within the lab.

Graph Neural Networks - NLP - Representation Learning - Intepretability

python - tensorflow - jupyter

## experience

02/2018 Intern

Machine Learning - Large-scale Data Processing

08/2018 @ LHCb Trigger Group, CERN

python - pytorch - jupyter

The aim is to select interesting particle collisions in a processing-friendly and interpretable way, using only low-level detector information. Throughput dropped by 84% on a 30MHz event rate, a gain tuneable based on signal efficiency requirements.

09/2017 Semester Project

Control - Kinematics - Robotics

02/2018 @ RLI, IDIAP

matlab - tango - java - python

Exploring partial joint control on a humanoid robot, which was finalized by an AR interface based on Tango to control the Baxter robot.

02/2017 Semester Project

Recommender Systems - News

06/2017 @ LSIR, EPFL

matlab - python

Identifying correlations in news coverage using Matrix Factorisation methods, usually used in recommender systems. Led to two publications at the WebConf and a funded news observatory project.

02/2016 Intern

Machine Learning - Robotics - Anomaly Detection

06/2016 @ LASA, EPFL

python - ROS

Designing predictive failure detection algorithms for multi-DOF robots. From sensor data, the algorithm predicts 93% of failures in simulated experiments.

06/2016 Intern

Control - Robotics - Odometry

09/2016 @ IRI, UPC-Barcelona

C++ - ROS - Kinect

Extending a visual odometry framework to support inertial readings at a high frequency. This included verifying and implementing IMU preintegration on manifold methods.

09/2015 Intern

Control - Drone - Anomaly Detection

02/2016 @ LIS, EPFL

C++ - Matlab

Implementation of a fast free-fall recovery algorithm for a quadcopter, allowing for emergency stabilization or throw recovery.

## references

Michele Catasta Stanford  
Postdoctoral Fellow  
pirroh@cs.stanford.edu

Conor Fitzpatrick CERN  
Research Physicist  
conor.fitzpatrick@cern.ch

Jure Leskovec Stanford  
Associate Professor  
jure@cs.stanford.edu

Pierre Vandergheynst EPFL  
VP Education  
pierre.vandergheynst@epfl.ch

## can do programming

proficiency Main Python  
Scholar C(++)  
Working Swift/Rust/JS

## software

Matlab Solidworks (CAD)  
Sketch Gantt Project ROS  
Final Cut Pro Premiere Pro  
Docker Sklearn PyTorch  
Tensorflow Git Jupyter

## and also...

Speaker AI+Journalism Workshop  
pilote.media, 2019

Speaker ML Workshop  
powercoders, 2018

Teaching Assistant  
Applied Data Analysis, EPFL, 2017

Head of IT  
Satellite, EPFL, 2016-2017

Stage + Music programmer  
Sat Rocks, EPFL, 2016

Contributor Signal for iOS  
Open Whisper Systems, 2014

Freshman Counselling  
EPFL, 2014

Student Assistant CS101  
EPFL, 2013

## and for fun...

Tennis Running Climbing  
Music curation Film editing  
Traveling

