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
MSc Thesis

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...

since 08/2019 — **Senior Research Scientist @ Robust.AI**
Software Architecture - Robotics - Probabilistic Programming - Hybrid Methods
python - rust

Designing and building an extensible robotics platform that enables reliable behavior for mobile robots equipped with rich sensory input and common sense reasoning.

experience

09/2018 – 07/2019 **MSc Thesis @ SNAP, Stanford / LTS2, EPFL**
Graph Neural Networks - NLP - Representation Learning - Intepretability
python - tensorflow - jupyter

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.

02/2018 – 08/2018 **Intern @ LHCb Trigger Group, CERN**
Machine Learning - Large-scale Data Processing
python - pytorch - juypter

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 – 02/2018 **Semester Project @ RLI, IDIAP**
Control - Kinematics - Robotics
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 – 06/2017 **Semester Project @ LSIR, EPFL**
Recommender Systems - News
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 – 06/2016 **Intern @ LASA, EPFL**
Machine Learning - Robotics - Anomaly Detection
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 – 09/2016 **Intern @ IRI, UPC-Barcelona**
Control - Robotics - Odometry
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 – 02/2016 **Intern @ LIS, EPFL**
Control - Drone - Anomaly Detection
C++ - Matlab

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

references

Mohamer Amer Robust.AI
Co-Founder & CSO
mohamed@robust.ai

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/Rust
Scholar	C(++)
Working	Swift/JS

software

ROS • openCV • pyro • numpy
PyTorch • Tensorflow • sklearn
Docker • Kubernetes • protobuf
gRPC • NATS • Ableton
Sketch • Final Cut • Solidworks

and also...

Blogger Artifices Intelligents
Le Temps, 2018-2019

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...

Music (curation, creation, DJ) • Climbing • Road Biking • Tennis