Dylan Bourgeois

US & French citizen

04/11/94

contact@dtsbourg.me
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education

09/2016 – 04/2019 Master of Science & Engineering /speciality Robotics, EPFL

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

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

can speak...

proficiency

mother tongue English
mother tongue French
fluent Spanish

publications

Explanations and meaningful information: at the interface between technical capabilities and legal frameworks
Bourgeois & Vergnolle
PLSC'22

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
NeurIPS'19

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 - typescript

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

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.

patents

Ultraviolet cleaning trajectory modeling
Trevor, **Bourgeois**, Kollmitz, Chao US20210347048A1

Cleaning Robot
Brooks, **Bourgeois**, et al. US20210346543A1

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