Loïs Bilat

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EDUCATION

Master of Science in Computer Science

EPFL

2018 – 2020 | Lausanne, Switzerland

- Specialization : Data Analytics
- Semester project : Audio Denoising with Generative Models - 6.0 / 6.0
- Master Thesis : Cross-lingual Toxicity Detection - 6.0 / 6.0
- Final GPA : 5.83 / 6.0

Bachelor of Science in Computer Science

EPFL

2015 – 2018 | Lausanne, Switzerland

- Optional Track : Visual Computing
- GPA : 5.47 / 6.0
- Study exchange at Linköping Universitet, Sweden. 2017 – 2018, GPA : 5.97 / 6.0

Maturité Gymnasiale

Gymnase de Burier

2012 – 2015 | La Tour-de-Peilz, Switzerland

- Specific Option : Physics and application of Mathematics
- Complementary Option : Computer Science
- Excellence award in Physics
- GPA : 5.32 / 6.0

EXPERIENCE

Master Thesis / Internship

EPFL / ELCA Informatique SA

2020 | Lausanne

- Master Thesis on Cross-lingual Toxicity Detection
- Developped a cross-lingual toxicity detection system with API access and a web interface
- Used advanced Transformer-based models and implemented various improvements to exisitng models

Student Assistant

EPFL

2019 - 2020 | Lausanne

- Student assistant for a computer science course given to mathematics and physics bachelor students (ICC - Information, Calcul et Communication)
- Helping them with C++ assignement and various theoretical exercices

Summer Job in an Architectural Firm

ABA Partenaires SA

2018 | Lausanne

- Modification and correction of blueprints
- Processing replies to requests for tender

Web development

yvesbilat.ch

2016

- Creation of a website for an entrepreneur using WordPress

LANGUAGES

French - Mother Tongue

English - B2

German - B2

PROGRAMMING LANGUAGES

Python
Java
Scala
C/C++
SQL
PHP
HTML
CSS
LaTeX
OpenGL
Assembly
VHDL
Javascript

SKILLS

Topics

Machine Learning | Deep Learning | Data Analysis | Artificial Intelligence | Reinforcement Learning | Natural Language Processing | Computer Vision

Libraries

Pytorch | Scikit-learn | Transformers | Numpy | Pandas | Flask | Keras | Spark | OpenCV | nltk | Matplotlib

Applications and Tools

VS Code | Git | Docker | Jupyter Notebooks | Anaconda | Intellij IDEA | Android Studio | Wordpress

Operating Systems

Linux (Archlinux, Ubuntu) | Windows 10

PROGRAMMING PROJECTS

Cross-lingual Toxicity Detection

Master Thesis

2020 | EPFL - ELCA Informatique SA

With the increasing use of social media, there is a critical need for performant automatic moderation tools. In this thesis, we present advanced classifiers that can detect hateful and offensive content in short texts. We study various architectures based on transformer models such as BERT and evaluate multiple changes to those models that improve their performance. We then tackle cross-lingual classification and introduce new architectures that use joint-learning and data translation. Our models are able to outperform existing multilingual models on zero-shot and multilingual classification. PyTorch Transformers Docker

Denoising with Generative Models

Semester Project

2019 - 2020 | EPFL - VITA Lab

Generative adversarial networks have often been used for image processing (for instance denoising and super-resolution). However, those techniques are less common in audio applications. The goal of this project is to first evaluate state-of-the-art techniques for audio denoising and audio super-resolution, and then to try to apply some of the Generative methods used in image processing to audio processing. Python PyTorch

Detecting Bias in Amazon reviews

Course Project

2018 | EPFL

A Data Story about the potential bias that can be found in Amazon user reviews, and how to correct it. We worked on 20GB of comments extracted from various Amazon articles, and used multiple tools including Pandas, pyspark, and matplotlib. Python Pandas Matplotlib Jupyter notebook

The Quest for The Holy Grail

Course Project

2018 | LiU

Creation of a 3D maze game with different objectives, world physics, lightning effects, drawing optimisation. user interface and sound effects. C OpenGL

Tankode

Junction Hackathon

2017 | Helsinki, Finland

Creation of an educative video game where the behavior of a Tank had to be programmed by the user. This game was programmed in less than 48 hours using Android Studio, in a team of 4 people. I had the opportunity to learn how to work efficiently in a team by splitting the work in an optimal way. Java Android Studio

3D game - Tangible user interaction

Course Project

2017 | EPFL

Creation of a dexterity 3D game where the environnement had to be controled by moving a LEGO board in front of a camera. It implemented some image processing and recognition and was done using *Processing*. Java

XBlast

Course Project

2016 | EPFL

Creation of a multiplayer video game based on the game *Bomberman*. It could be played by up to 4 player on different computers. Java

Calcul Mental

Android Application

2015

Creation of an Android app that people can use to do some small calculations (additions, substractions, multiplications and divisions). Different modes, such as a test mode, a timed mode and a rush mode are available. Java Android Studio

La Pipopipette

Travail de Maturité

2014 | Gymnase de Burier

Creation of a multiplayer video game for iOS based on the game *Dots and Boxes*. An artificial Intelligence was implemented. Objective-C Xcode