Diego Antognini

Ph.D. Student in Natural Language Processing & Machine Learning

Contact

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Personal Information

Born 1993/11/28
Swiss citizen
Single

Languages

French: Native
English: Full professional proficiency
German: Limited working proficiency
Spanish: Spoken fluently

Networks

Github: Diego999
LinkedIn: diegoantognini
Skype: diegoantognini

Interests

Natural language processing, Machine Learning, Artificial intelligence, Distributed systems.

Skills

Programming languages: Python, C++, CUDA, Java, SQL, Scala, Matlab.
Software libraries/frameworks: PyTorch, Tensorflow, Keras, Spark, Scikit-learn, Thrift.
Miscellaneous: Git, PyCharm, IntelliJ IDEA, Astah, Balsamiq Mockups, Visual Studio, Eclipse.

Education

2017 - present
May -
Ph.D. in Computer Science — Swiss Federal Institute of Technology in Lausanne (EPFL)
Research topics: natural language processing, machine learning & game theory.
Advisor: Prof. Boi Faltings. **Group**: artificial intelligence laboratory (LIA).

2014 - 2017
M.Sc. in Computer Science — Swiss Federal Institute of Technology in Lausanne (EPFL)
Focus on NLP, ML, artificial intelligence and distributed systems. *GPA 5.5/6.0*
Thesis: From Relation Extraction to Knowledge Graphs (6.0/6.0).

2014 - 2015
HES Pathway in Computer Science — Swiss Federal Institute of Technology in Lausanne (EPFL)
Preparatory year of 62 ECTS credits to be accepted in M.Sc. *GPA 5.4/6.0*

2011 - 2014
B.Sc. HES-SO in Computer Science — Haute Ecole Arc, Neuchâtel
Oriented on Multimedia Software Engineering. *GPA 5.6/6.0*
Thesis: NeoBrain (6.0/6.0).
Award: Excellent bachelor thesis and second best GPA.
Award: Deserving student in second year in computer science.

2008 - 2011
Maturité Professionnelle Technique — Centre Professionnel du Littoral Neuchâtelois, Neuchâtel
With merit. **Award**: Third best GPA. *GPA 5.2/6.0*

2008 - 2011
CFC in Computer Science — Centre Professionnel du Littoral Neuchâtelois, Neuchâtel
With distinction. **Award**: Second best GPA. *GPA 5.5/6.0*

Experiences

2017 - present
May -
Swiss Federal Institute of Technology, Research/Teaching assistant — Lausanne
Attend in research of LIA group, help in teaching and supervise master projects.

2015 - present
Aug. -
Haute Ecole Arc, Expert B.Sc. & M.Eng. thesis — St-Imier
Thesis expert in computer science of 5 B.Sc. as well as 4 M.Eng. students.

2015 - present
Mar. -
Centre Professionnel du Littoral Neuchâtelois, Expert CFC final projects — Neuchâtel
Expert of 36 students for evaluating CFC final projects.

2016 - 2017
Sep. - Mar.
Iprova Sàrl, Machine Learning & Data Mining Intern — EPFL Innovation Park, Lausanne
Master thesis in the domains of natural language processing & machine learning.

2015 - 2016
Dec. - Jan.
Squar SA Partenaires Associés — Marin, Neuchâtel
Realization of an Access database to manage customers & insurance polices.

2013
Feb. - May
Roth Stores Services Sàrl, PHP developer — La Sagne, Neuchâtel
Realization of the intranet website which allows to manage interventions.

Projects

2016 - 2017 Sep. - Mar.
From Relation Extraction to Knowledge Graphs Iprova | M.Sc. thesis (Dr. J-C Chappelier)
Machine learning, Natural language processing
This master thesis tackles the problem of building a Knowledge Graph of concepts using Relation Extraction from texts. Concepts consist of short phrases made of adjective and nouns. The first part of the work relates to developing different models (CNN, RNN, Bi-RCNN) with the ability to classify the semantic relationship among two concepts (Relation Classification). The second part of this work focuses on building a dataset containing the type of relations *Iprova* is interested in, train our best model on it and apply it on concepts with sentences extracted from different corpora in order to build representative Knowledge Graphs from them. Finally, this kind of Knowledge Graph currently doesn't exist (at least publicly) up to our knowledge. We bring a tool to model domains of interest providing related concepts with relations among them as well as a state of the art model for Relation Classification task of *SemEval-2010 Task 8*.

2016 Feb. - June
Hurricane EPFL | Semester project (Prof. Willy Zwaenepoel)
Distributed systems, C++, Thrift, ZeroMQ
Hurricane is a scalable decentralized system that aggregates secondary storage devices in a cluster with the aim of supporting parallel scans of data stored across them. Hurricane spreads input and output data uniformly at random and leverages the absence of order between data blocks to seamlessly balance load and mitigate the effect of stragglers. Hurricane is implemented with an HDFS-like RPC interface to facilitate interoperability and show that the resulting system is scalable and seamlessly achieves I/O balance at near-maximal bandwidth.

2015 Nov. - Dec.
Image classification EPFL | course Pattern classification and machine learning
Machine learning, Matlab
The purpose is to classify images into one of the four categories: contains an airplane, contains a car, contains a horse or other. The prediction was done for 15'000 images with an error of 8%. We have used the histogram of oriented gradients and OverFEAT ImageNet CNN features as features in order to distinguish them. Best models we obtained used neural networks and SVM.

2015 Oct. - Dec.
Optimized flocking algorithm for e-pucks EPFL | course Distributed intelligent systems
Swarm, Flocking, Reynolds, Particle Swarm Optimization, C
The goal is to implement, test, analyze, and optimize a flocking algorithm for e-pucks robots. The algorithm provides the robots with the ability 1) to avoid obstacles while retaining the collective formation, and 2) to maintain collective formation while two different flocks of robots cross each other moving in opposite directions. Particle swarm optimization is used to optimize the behavior.

2014 Mar. - July
NeoBrain - Computing neuronal maps HE-Arc | B.Sc. thesis (Prof. Cédric Bilat)
GPU programming with CUDA, Computer graphics, C++
Development of an algorithm multi-GPUs to compute an accurate 3D real time rendering of the electromagnetic activities of the brain. Got speedup of 100K, reducing computation time from 20h to 700ms.

2014 Mar. - May
Facial recognition among profiles HE-Arc | course Image processing
Machine learning, Image processing, Qt, C++
The purpose is to detect if a person has sunglasses using a set of profile pictures of different persons. Each one of them has pictures with different head positions, humors and with/without sunglasses. We used an artificial neural network.

2014 Feb. - Mar.
Recommender System challenge HE-Arc | Semester project
Machine learning, Recommender system, Natural language processing, Java
Third task of the challenge of European Semantic Web Conference on a Top-N recommendation of books.

2013 - 2014 Sept. - Feb.
Social Recommendation System HE-Arc | Semester project
Machine learning, Recommender system, Natural language processing, Python
Recommender systems for events based on user's data and Facebook profile.