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Alessandro Rennola

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EDUCATION

Undergraduate: Polytechnic University of Turin; Turin, Italy — *Sep 2014 – July 2017*
BS Computer Engineering. — **GPA:** 4.0 equivalent (110/110)

Graduate: Polytechnic University of Turin; Turin, Italy — *Sep 2017 – Oct 2019*
MS Computer Science – Data Science, with Honors. — **GPA:** 4.0 equivalent (110 e lode/110)

Graduate: University of Illinois at Chicago; Chicago, IL — *Sep 2017 – Dec 2019*
MS Computer Science, with Honors. — **GPA:** 4.0

Relevant Coursework: Software Engineering *(OOP, Agile software development, Android Programming)*, **Neural Networks** *(Gradient Descent, Backpropagation, SVN, PCA, Pattern Recognition, Classification, Clustering),* **Deep Learning** *(CNN, GAN, RNN, (Bi)LSTM*), Databases *(Databases, Data warehousing, DBMS, Data Mining)*, Big Data *(Hadoop MapReduce, Spark, Spark ML Framework, Spark Streaming Framework)*, Information Retrieval *(Text classification and mining, index construction, scoring, weighting).*

WORK EXPERIENCE

Machine Learning Engineer — *Sep 2019 – Present*
Comau - FCA Group

- Improve existing solutions on several computer vision tasks, including high-precision pattern matching, optical character recognition and blob analysis using Halcon and C++.
- Develop a sound recognition pipeline in Python, adapting the 'speech commands recognizer' by Tensorflow on a custom dataset. The resulting performance sets around 92% accuracy for a 10-class balanced classification problem.
- Conduct deep quantile regression for supervised anomaly detection, increasing by 9% the F-Score on the test set and significantly decreasing the inference time in a time-sensitive application.

Research Assistant, Information retrieval & Deep Learning — *Jan 2019 – Jun 2019*
University of Illinois at Chicago

- Extract accurate actionable information from disaster related tweets.
- Develop semi-supervised approaches for (Virtual) Adversarial BiLSTM-based text classification models. Significant improvement of performance in comparison with several supervised and semi-supervised Machine Learning (SVM, NB) and Deep Learning (CNN, BiLSTM) models.

Teaching Assistant, Algorithms and Programming, Databases — *Oct 2016 – June 2017*
Polytechnic University of Turin

- Assist 300 students during 'Databases' laboratory classes: SQL (Oracle, MySQL), Relational Algebra, HTML and PHP.
- Assist 300 students during 'Algorithms and Programming' laboratory classes: Algorithms, Data Structures (Lists, Trees, FIFO, LIFO and priority queues, Hash tables, Graphs) and advanced Problem Solving, including Combinatorics in C.

RESEARCH EXPERIENCE

Tweet Actionability Classification *Flagging 'calls for help' to aid first responders* — *Sep 2018 – Dec 2018*

- Two-person project aiming at classifying actionable information in Tweets during disastrous events using an unsupervised approach. Actionable information on Social Media is scarce, so the data is deeply unbalanced.
- This simple, but effective approach was able to rank tweets according to their actionability measure with a precision of 70% in the first 10 results. Coded in Python. Code: https://github.com/arenn0/TweetActionabilityClassification

ARM LandTiger V2.0 LPC1768 *Educational Library* — *Oct 2017 – Mar 2018*

- Two-person project to build educational libraries for the LandTiger development board peripherals, specifically the GLCD and the TouchPanel. Coded in C and ARM Assembly. Code: https://github.com/arenn0/LandTiger.

SKILLS

- Python, C/C++, Java, MATLAB, SQL, HALCON.
- **Keras**, TensorFlow, PyTorch, Hadoop MapReduce, Spark, Qt C++.
- AWS: EC2, Git, GitHub, GitLab.
- Languages: Italian (Native), English (Fluent – IELTS: Reading 8.5, Listening 9, Writing 6, Speaking 7)
- Invited Member of the Golden Key Organization at UIC for students in the *top 15%* of their class and top performing graduate students