Georgiana Neculae

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EDUCATION

I have a broad experience in AI and machine learning, in fundamental and applied fields.

PhD Machine Learning ***Sept. 2015 - Dec. 2019***

The University of Manchester, UK

Topics: Ensemble Learning, Spiking Neural Networks, Deep Learning

Project: A Study of Ensemble Learning Applied to Spiking Neural Networks

1^{st} ***class honours Master of Engineering*** ***Sept. 2011 - June 2015***

Computer Science with Artificial Intelligence

The University of Manchester, UK

Topics: Machine Learning, Mathematical Logic, Game Theory, Computer Vision, Natural Language Processing, OOP, Algorithms and Data Structures, Algorithm Complexity, Distributed Computing

Project: Automatic Human Activity Analysis

PROFESSIONAL EXPERIENCE

I have a strong interest and significant recent experience in multidisciplinary projects.

Research Intern at IBM Research *(Daresbury, UK)* **February 2019 - May 2019**

- Deep learning applied to improving chemical representations.
- Evaluated state of the art representation learning methods for chemical tasks.
- Implemented a multitask deep neural network, used in a transfer learning scenario to a multitude of drug discovery tasks.

CERN Summer Student *(Geneva, Switzerland)* **June 2014 - August 2014**

- Developed a tool for monitoring the CMS (one of the two largest detectors built on the Large Hadron Collider) cluster in the CERN experimental area.
- Extended knowledge of databases by using MySQL and web-based technologies, including the Twitter Bootstrap library, PHP, and JavaScript, as well as visualization techniques and packages.
- Successfully managed tasks through careful organization, as supported by feedback received from presentations and group meetings with the assigned supervisors.

TEACHING/MENTORING EXPERIENCE

I am organised and motivated, used to working in a team or individually.

Teaching Assistant *(Manchester, UK)* **January 2016 - Present**

- Taught and demonstrated for undergraduate and Master's students as part of *Artificial Intelligence Fundamentals* - 1st year course, *Machine Learning* - 2nd year course and *Foundations of Machine Learning* - Master's course.
- Evaluated students both online and offline, coordinating the other TAs.

- Delivered a lecture on deep learning for the Master's *Foundations of Machine Learning* course.
- Delivered talks and presentations during a series of events as part of university open days.
- During my undergraduate studies I mentored first year students, helping them adjust to the new environment.
- Became a PGR mentor supporting and advising PhD students, with a focus on integrating and helping the newer PhDs to settle in. We organized dinners, trips and other social events, as well as sessions with academics to advise on progression through the PhD.

University of Manchester Internship *(Manchester, UK)* **July 2013 - September 2013**

- Developed new lab exercises for the second year *Computer Graphics* course, by investigating areas of interest in the field and identifying skill sets that need to be achieved.
- Investigated 3D design software for modelling, animation and rendering, and created a set of exercises that could be integrated in the new course.
- Improved 3D visualizer software, by adding more complex models and integrating textures with the existing environment.

SKILLS

Programming :	Python, Java, C/C++, Matlab
Libraries/Frameworks :	TensorFlow, PyNN, Brian2, Neuron, Numpy/Scipy, Scikit-learn, MongoDB
Languages :	Romanian (native), English (near native)

PROJECTS

I am creative and curious, taking part in competitions and challenges.

- Won the prize for the *Most Educational* project as part of the WebFest hackathon organized by CERN over the course of a weekend.
- Achieved second place in a competition where each team had to improve the existing Barclays online banking application.
- Received a First Class for my third year project: Automatic Human Activity Analysis, which involved identifying human movements in videos.

ADDITIONAL INFORMATION

I enjoy communicating my research and learning about other areas by attending academic workshops and conferences.

Advances in Data Science 2019 Poster Presentation:

- Presented some of the results of my work on efficiently creating ensembles of spiking neural network, such that on average the ensemble prediction is better than the individual's.

INIT/AERFAI Summer School, ECML PKDD 2018:

- Attended tutorials and workshops given by leading experts in the areas of ensemble learning, deep learning, probabilistic graphical models, semi-supervised learning, evolutionary computing, GANs.