Viviana Petrescu

Curriculum Vitae

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Education

09/2014 to date **École Polytechnique Fédérale de Lausanne**, *Switzerland*, *GPA: 5.5/6*.
Phd Fellowship. Worked on speeding up Convoluational Neural Networks using separable filters and on predicting molecular properties using machine learning techniques. Libraries used: Theano (Python) and Torch (Lua). Courses taken: Pattern Classification and Machine Learning, BigData.

09/2009 - 01/2012 **Eidgenössische Technische Hochschule**, *Zurich, Switzerland, GPA: 5.45/6*.
Master Degree in Computer Science - with focus on Visual Computing and Machine Learning.

09/2006 - 06/2009 **Jacobs University Bremen**, *Germany, GPA: 1.53 on a scale 5-1*.
Bachelor Degree in Computer Science.

Industry Experience

04/2012 - 08/2014 **Scandit / ETH**, *Zurich, Switzerland*.
C++ Softare Engineer R&D. Worked on real time computer vision algorithms for a leading barcode scanner SDK for iOS and Android. Added support for new barcode formats and improved existing image processing pipeline in order to better recognize barcodes in blurry images.

10/2011 - 02/2012 **Nebion**, *Zurich, Swizterland*.
Java Software Engineer intern. Nebion provides a powerful search engine that integrates and instantly mines thousands of curated biological datasets. Optimized and implemented a new biclustering algorithm in Java - NP-complete problem.

06/2010-09/2010 **Disney Research Lab**, *Zurich, Switzerland*.
C++ Software Engineer intern. Implemented from scratch a user interface for controlling the LEDs of a dome using C++ and Qt. The colors of the LEDs were controlled either by XML configured files or by wrapping the colors of an image onto the dome's shape.

10/2009-01/2010 **Disney Research Lab**, *Zurich, Switzerland*.
C++ Software Engineer, part-time employment. Porting to C++ the Matlab implementation of the Conjugate Gradient algorithm for stereo vision - the process of extracting 3D information from multiple 2D views of a scene.

07/2009-09/2009 **Department of Geoinformatics**, *University der Bundeswehr, München, Germany*.
C++ Software engineer intern. Developed a tool for visualising the underground pipes of the city in 3D-PDF using C++ and the library PDF3D-SDK.

06/2008-09-2008 **Google**, *Trondheim*, Norway.
C++ Software engineer intern. Built a tool for visualizing data flow in MapReduce jobs. Relevant information was extracted from logs and the flow was represented as directed graphs using GraphViz. The project aimed at discovering highly active cells for a better utilization of resources.

Research and Project Experience

03/2011 - 10/2011 **Master thesis**, *ETH Zurich*, Switzerland.
Worked on a weakly supervised object recognition task on improving the memory and time complexity of LocLearn (algorithm for simultaneous localizing and learning an object class) - supervisor Prof. Dr. Vittorio Ferrari. (Can be found at http://e-collection.library.ethz.ch/eserv/eth:4671/eth-4671-01.pdf)

09/2010 - 12/2010 **Modelling the performance of a system**, *Advanced Systems Lab, ETH Zurich*.
Worked in a team with Davide Arrigo and Darko Makreshanski. We developed and tested the stability and performance of a Java system consisting of multiple clients, middlewares and postgresql database servers, following the TPC-H specification.

02/2009 - 05/2009 **Guided research, Jacobs University**, *Bremen, Germany*.
Guided research in improving single-word recognition using auxiliary trained feedback in Echo State Networks - supervisor Prof. Dr. Herbert Jaeger. (Can be found at https://svn.eecs.jacobs-university.de/svn/eecs/archive/bsc-2009/vpetrescu.pdf)

02/2008 - 02/2008 **Mathematical Contest in Modelling**.
Honorable Mention with team members Simon Schmitt and Momchil Minkov. Implemented an algorithm in Matlab for creating Sudoku puzzles of different levels of difficulty.

Teaching Experience

01/2015-06/2015 **Department of Computer Science, EPFL**, *Lausanne*, Switzerland.
Student Assistant for *Probability and Statistics*. Tasks included grading exams and supporting students during lab sessions.

09/2007-05/2009 **Department of Computer Science, ETH**, *Zurich*, Switzerland.
Student Assistant for *Informatics II D-MAVT* and *Discrete Mathematics* courses. Tasks included grading weekly assigments and holding tutorials.

09/2007-05/2009 **Department of Computer Science and Mathematics, Jacobs University Bremen**, Germany.
Teaching Assistant for *C++ Object Oriented Programming lab*, *Algorithms and Data Structures lab*, *Single Variable Calculus* and *Linear Algebra, Probability, Statistics*. Tasks included grading weekly assigments and supporting students during lab sessions.

Languages

Romanian	English	German	French
mother tongue	proficient	A2 - European level	A2 - European level

Programming skills

On a scale from Beginner, Intermediate, Good to Expert I rate my knowledge of:

Programming **Good: C++, Matlab. Intermediate: Java, Python, Postegresql**.

Frameworks **Beginner: Torch (deep learning library), Spark, Hadoop**.

Tools **vim, Eclipse, Git, GitHub**

Skills and Achievements

Publications B.Alexe, V.Petrescu and V.Ferrari, "Exploiting spatial overlap to efficiently compute appearance distances between image windows", Neural Information Processing Systems 2011

Workshop/Further education
- Trainer for Intercultural and Transition Management Workshop, Jacobs University Bremen, Germany 2007 - prepared freshmen for coping with a multicultural environment
- Product design workshop at Google office Zurich in June 2010
- Didactic training certification at ETH Zurich, Switzerland 2011
- Successfully completed (100/100 points) the online non-credit Machine Learning course, offered by prof. Andrew Ng from Stanford University, 2013

Awards
- EMEA Anita Borg finalist 2010.
- Member of the President's list for high academic achievement at Jacobs University Bremen in 2008-2009.
- Mention (bronze medal) at the National Olympiad of Mathematics in Romania from 2001 to 2004. Various prizes at mathemaical competitions (more than 10) across Romania in 2002-2006.