

Monica-Andreea DRĂGAN

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github.com/monicadragan



I am a Bioinformatics and Artificial Intelligence enthusiast who likes being involved in multidisciplinary fields. My aim is to contribute to the better understanding of the human body and diseases and, in the way of discovering something about the outside world, to end up knowing myself.

Education

- Sept 2013- exp. 2015** **ETH Zürich, Switzerland**
Master in Computer Science
- Oct 2009- July 2013** **Politehnica University of Bucharest, Romania**
Faculty of Automatic Control and Computers
Major in Engineering and Computer Science
GPA: 9.59/10, rank 9 out of 131 graduates
- Sept 2011- Jan 2012** **University of Paris 6 (Université Pierre et Marie Curie, France)**
Department of Informatics
ERASMUS student
- Sept 2005- June 2009** **Mircea cel Bătrân High School, Constanța**
Mathematics and Informatics class
Baccalaureate GPA: 9.96/10

Experience

Projects and Work Experience

- Nov 2013- present** **ETH Zürich, D-BSSE Computational Biology Group**
Student Assistant
We develop MinPEPCo, a Java tool that estimates a minimum set of haplotypes from a given a set of paired reads obtained by ILLUMINA sequencing. Mentored by Prof. Niko Beerenwinkel.
- June - Oct 2013** **Queen Mary University of London, Wurm Lab.**
Google Summer of Code funded student developer
We developed GeneValidator, an open source RubyGem that identifies problems with predicted genes. Mentored by Dr. Yannick Wurm and Anurag Priyam. (github.com/monicadragan/GeneValidator)
- Oct 2012 - Feb 2013** **Politehnica University of Bucharest, Romania**
Associate Teaching Assistant for the Assembly Language class
Responsibilities: teach laboratory classes, write lab exercises and evaluation papers, grade homework. Coordinated by Prof. Vasile Lungu.
- July-Sept 2012** **Politehnica University, Artificial Intelligence and Multi-Agent Systems Laboratory**
Summer internship in Artificial Intelligence
Designed a system for human activity recognition in smart environments (written in Java and Octave). Mentored by Prof. Irina Mocanu.
- May-July 2012** **Politehnica University, Center for Surface Science and Nanotechnology**
Internship in Nanotechnologies
Ported an application for a scanning microscope from Win 3.1 to Windows XP and created a basic user interface (used C, C# and Assembly). Coordinated by Silviu Ciobanu and Prof. Marius Enachescu.
- July-Sept 2011** **Adobe Systems Inc, Romania**
Software Engineer Intern
Developed an ePUB module for a digital publishing content management system. Languages and Technologies used: JSP, Javascript, HTML, Adobe Day. Coordinated by Andrian Cucu, Senior Developer.
- June 2011** **Politehnica University, NCIT High Performance Computing Center**
Android Summer Camp
Developed an Android App for managing the air conditioning system in a cluster remotely. Coordinated by As. Alexandru Olteanu.

Training

- July 2014** **Max Plank Institute of Molecular Cell Biology and Genetics, Dresden, Germany**
Dresden Summer School in Systems Biology
Lectures and hands-on training in spatiotemporal modeling and simulation of biological systems.
- Nov 2012** **Workshop on HMMs: from Theory to Applications**
Romanian Association for Artificial Intelligence (ARIA)
Constructed a speaker-independent speech recognition system.
- July-Aug 2012** **Institute for Scientific Computation and Simulation, University of Paris 6**
Summer School in Biomathematics and Bioinformatics
Built mathematical models and implemented algorithms for applications in bioinformatics.

Distinctions and Competition Results

- July 2014** **Dresden Summer School in Systems Biology**
2nd prize for "Model of Cell Polarity in *C. elegans*" (among 6 multidisciplinary teams of 4 students)
- June 2013** **Romanian Academy, Annual Congress of the Romanian Medical Association**
Honors Diploma
Paper: "Identification of Single Nucleotide Polymorphisms in Conserved regions for TCF7L2 Gene"
- Sept 2012** **Politehnica University of Bucharest, Romania**
Ranked the 1st among 30 projects at Successful Career in AI (CASIA) colloquium 2012
Project: "Human Activity Recognition in Smart Environments"
- July 2012** **Mira Telecom Excelence Scholarship for Internship in Nanotechnologies**
- Mar 2008** **"NASA Space Settlement Design Contest" international competition**
3rd prize, Potter's Wheel Team Project (together with 5 other schoolmates)
- 2007 - 2008** **Mathematics and Physics Olympiads during high school (regional level)**
○ Mathematics: ranked the 1st in 2008 (qualification to the national level) and the 3rd in 2009
○ Physics: ranked the 3rd in 2007 and the 1st in 2008

Computer skills

Programming languages C/C++, Java, Octave/Matlab (advanced), Ruby, Python, Android, R, PHP, SQL (intermediate), Javascript, Prolog, Haskell, Scheme, Ada (basic)

Publications and Presentations

- July 2014** M.A. Dragan, poster on "Computational tools for handling modern biological data", Dresden Summer School in Systems Biology (goo.gl/0jrx1C)
- June 2013** M.A. Dragan, P.D. Cristea "Comparative Analysis of 3 Candidate Genes in Type 2 Diabetes for Various Species", Systems, Signals and Image Processing (IWSSIP), 20th International Conference (goo.gl/s4nujq)
- May 2013** M.A. Dragan, I. Mocanu, "Human Activity Recognition in Smart Environments", Control Systems and Computer Science, 19th International Conference (goo.gl/2mR0LP)

Additional Information

Foreign Languages

English: Advanced Level *Cambridge Advanced Exam, grade C, 2008*

French: B1 Level *Attestation de Langue, University of Paris 6, 2012*

German: A2.2 Level *Certificate of Achievement, ETH Zürich, 2014*

Interests

- Photography** Founding Member of "Photo Break" Club for exhibitions and talks (Constanța, 2008). I have been publicizing photos in "Orthodox Family" magazine (circulation: 20,000 copies) from 2010.
- Astronomy** Observational astronomy and astrophotography enthusiast. Took part in astronomy camps and exposed pictures of Perseid Meteor Shower at International Meteor Conference, Croatia 2009.
- Sports** Ski and tennis, cycling, hiking and mountain climbing.
- Music** Member of several school choirs and now singing in the ad-hoc Chorus of the Romanian students in Zürich. Took piano lessons and recently started playing the Romanian pan flute.

Volunteering

- First aide volunteer at Red Cross Constanța, summer 2007.
- Member of the Romanian Orthodox Students Association (ASCOR) starting from 2009.
Activities: charity and preservation of Romanian culture and traditions.