

# Victor Alexandru Darvariu

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🌐 <https://victor.darvariu.me>

🔗 VictorDarvariu

I am a computer science graduate and future doctoral student with good analytical skills and a strong interest in applied machine learning, algorithmic problem solving, and the practice of building efficient and scalable software systems. My ambitions are to begin a career in research, contributing to innovative projects that bare a high impact on the academic community and society as a whole.

## Education

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### University College London & The Alan Turing Institute, UK

**PhD Student in Data Science**

**2018 – 2021**

**Supervisor:** Mirco Musolesi

I will be affiliated with the Department of Geography at UCL and the UK's national institute for data science and artificial intelligence. The focus on my research will be on leveraging techniques across the machine learning and data science spectrum for quantifying, analysing and predicting human behaviour.

### University of Birmingham, UK

**MSci Computer Science with an Industrial Year, First Class with Honours (86% average)**

**2013 – 2018**

**Supervisor:** Dan R. Ghica. **Dissertation:** "DecML: A principled programming language for machine learning"

**Notable modules:** Java Team Project, Intelligent Data Analysis, Machine Learning, Neural Computation, Statistics, Mathematical Techniques for Computer Science, Artificial Intelligence, Functional Programming, Enterprise Systems, Computer Architecture, Software Engineering, Operating Systems, Networks, Computer Security

### Mihai Eminescu National College, Botosani, Romania

**Mathematics and Computer Science**

**2009 – 2013**

Romanian "Diploma de Bacalaureat" (A Levels Equivalent): 9.56/10

## Publications

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Steven Cheung, Victor A. Darvariu, Dan R. Ghica, Koko Muroya and Reuben N. S. Rowe. *A functional perspective on machine learning via programmable induction and abduction*. In Proceedings of the Fourteenth International Symposium on Functional and Logic Programming (FLOPS 2018), Nagoya, Japan.

## Work Experience

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- **Android Developer, Academic Services, University of Birmingham**

*October 2017 – January 2018*

- Worked on an Android application that shows students their timetable, lets them automatically record their lecture attendance via location capture, and obtain directions to lectures and seminars

- **Research Assistant, Department of Geography, University College London**

*June 2017 – August 2017*

- Establishing research methodology together with principal investigator
- Built a comprehensive Android application for study participants to use, that lets them record their mood and visualise it over time, senses contextual data (location, activity) and performs transmission to on-premise databases
- Responsible for data collection infrastructure, ethical approval and risk management procedures

- **Software Engineer, Technology & Information Risk, Morgan Stanley**

*June 2016 – June 2017*

- Worked on projects experimenting with new technologies in the information security division of a leading investment bank, gaining valuable commercial experience

- **Project 1:** Architected and built a contextual authentication system, consisting of: AngularJS front-end, RESTful Java middle tier, SQL data store, and machine learning based Python computational engine. Implemented outlier detection algorithms through statistical techniques & Markov chains. Enabled detection of anomalies in logins, configuration of rules to act on anomalies, and visualization tools
- **Project 2:** Experimented with the FIDO U2F protocol; built a service to expose the protocol, and integrated it with existing infrastructure - bringing frictionless second factor authentication to client-facing systems
- **Web Developer, Careers Network, University of Birmingham**  
*June 2015 – May 2016*
  - Worked on automating manual processes (content migration, resource auditing) with Python scripts
  - Built user surveys, analysed data and developed web-based learning resources for students
  - Acted as domain expert on web development in a non-technical team
- **Research Intern, Networked Systems & Data Science Lab, University of Birmingham**  
*July 2014 – September 2014*
  - Contributed to a project exploring authorship networks, learning data science tools and techniques
  - Worked on, documented and deployed a web application using LAMP stack and Python modules

## Technical Skills

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<b>Python</b>	Python core & data science packages: pandas, scikit-learn, NumPy, SciPy, matplotlib; web frameworks: Flask, Django.
<b>Data Science &amp; Machine Learning</b>	Solid knowledge of algorithms, techniques & practical implementation concerns.
<b>Android</b>	Experience building complex Android apps & Play Store environment.
<b>Java</b>	Advanced in large-scale, enterprise software development. Spring Framework, Apache CXF, Jetty, Hibernate, JSP.
<b>Web Technologies</b>	Intermediate in HTML, CSS, JavaScript, AngularJS; basic in node.js, Angular.
<b>Software Engineering Practices</b>	Design patterns, refactoring, object-oriented design, test-driven and behaviour-driven development, version control, issue tracking.
<b>Databases</b>	SQL – DB2, PostgreSQL; NoSQL – MongoDB, ElasticSearch; data modelling.
<b>Functional Programming</b>	Intermediate in OCaml; basic in Haskell, Scala.
<b>Unix / Linux</b>	Daily Linux user; experience with shell scripting.

## Teaching & Tutoring Experience

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- **Teaching Associate in Functional Programming, University of Birmingham**  
*September 2017 – December 2017*
  - Assisting second year students in practical sessions with functional programming techniques in Haskell, algorithmic thinking, and problem-solving
- **Peer Assisted Study Sessions Leader in Computer Science, University of Birmingham**  
*September 2014 – May 2015*
  - Participated in an internationally recognised tutoring scheme
  - Demonstrated creativity by developing collaborative activities to facilitate learning
  - Improved leadership and pedagogical abilities

- **Study Group Leader in Foundations of Computer Science, University of Birmingham**  
*October 2013 – December 2013*
  - Selected based on my performance in the module
  - Organised and led workshops and study sessions for students of different academic levels

## Honours & Awards

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- **Doctoral Studentship, The Alan Turing Institute**
  - Awarded a 3.5-year PhD studentship by the UK's national institute for data science and artificial intelligence in March 2018
- **“Best Second Year MSci Student”, School of Computer Science, University of Birmingham**
  - Recognised in October 2015 as the best-performing student in my cohort
- **“Personal Skills Award”, University of Birmingham**
  - Awarded in July 2015 as recognition for my contribution to the University's Careers Service, my tutoring and extracurricular activities
- **“Best First Year MSci Student”, School of Computer Science, University of Birmingham**
  - Awarded in October 2014 for my academic performance in my first year of study

## Interests & Achievements

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- Interested in algorithmic problem solving and competitive programming: won 3<sup>rd</sup> place ACM UK & Ireland Programming Competition 2015 at University of Nottingham; solved 50+ problems on UVa Online Judge
- Completed several MOOCs relating to data science and machine learning: Machine Learning, Elements of Statistical Learning, Mining Massive Datasets - Stanford University, Neural Networks – University of Toronto on Coursera and Stanford Online
- I contribute to the *socialalgorithm* open source organization, building platforms for algorithmic competitions
- Semi-finalist of the IBM Universities Business Challenge 2014
- ECDL & Cisco IT Essentials: Hardware and Software qualifications obtained in 2013

## Languages

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- English, Romanian – native level proficiency. Awarded Cambridge CAE, IELTS in 2011, 2012.
- French – limited working proficiency. Awarded DELF B2 in 2011.
- German, Spanish – basic proficiency

## References

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### **Mirco Musolesi**

*Reader in Data Science*  
Department of Geography  
University College London  
Turing Fellow  
The Alan Turing Institute  
m.musolesi@ucl.ac.uk

### **Alun Butler**

*Vice President*  
Technology & Data  
Morgan Stanley  
a.r.butler@gmail.com

### **Dan R. Ghica**

*Reader in Semantics of Programming Languages*  
School of Computer Science  
University of Birmingham  
d.r.ghica@cs.bham.ac.uk

### **Mark Lee**

*Senior Lecturer & Deputy Head of School*  
School of Computer Science  
University of Birmingham  
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