Petar Veličković

PhD Student in Machine Learning and Bioinformatics

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Education

Trinity College, University of Cambridge — Cambridge, United Kingdom
2016–present
Doctor of Philosophy (PhD), Machine Learning and Bioinformatics

- ∼ Research proposal: *"Developing machine learning algorithms on complex networks"*
- ∼ Supervised by Dr Pietro Liò and Dr Thomas Sauerwald (second adviser)

Trinity College, University of Cambridge — Cambridge, United Kingdom
2012–2015
Bachelor of Arts (BA Hons. (Cantab.)), Computer Science

- ∼ Results:
  - Part IA: Class I (mark 283/375, rank 10/83)
  - Part IB: Class I (mark 302/400, rank 13/80)
  - Part II : Class I (mark 312/400, rank 9/74)
- ∼ Final-year dissertation: *"Molecular multiplex network inference"* (mark 80/100)

Matematička gimnazija — Belgrade, Serbia
2008–2012
Mathematical Grammar School

- ∼ GPA: 5.00/5.00
- ∼ Final-year project: *"Development of a software emulator for the GameBoy console"*

Work Experience

University of Cambridge — Cambridge, United Kingdom
2016–present
Research Assistant in Computational Biology

- ∼ Computer Laboratory | Artificial Intelligence Group

Cambridge Spark — Cambridge, United Kingdom
2016–present
Machine Learning Tutor

- ∼ Developing educational online resources on machine learning, teaching and delivering tech talks
- ∼ `https://cambridgespark.com/courses/machine-learning`

Nokia Bell Labs — Cambridge, United Kingdom
Jul–Oct 2016
Research Associate

- ∼ Deep learning for massive-scale medical time series data analysis

Jane Street Europe Limited — London, United Kingdom
Jun–Sep 2015
Software Developer Intern — New York, United States

- ∼ Development of a translator from a new S-expression based linear temporal logic (LTL) query language into a form recognisable by an existing LTL query solver
- ∼ Development of an algorithm and model implementation that automates a critical process within a distributed system used for the purposes of facilitating trading
- ∼ Optimisations of several subroutines within Jane Street's Bignum library for arbitrary precision arithmetic, as well as the underlying open-source project (Zarith)

Jun–Aug 2014 | **University of Cambridge** | Cambridge, United Kingdom
Undergraduate Researcher

- ∼ Computer Laboratory | Computer Architecture Group
- ∼ Development of hardware and tools for debugging and tracing, as part of the ongoing CHERI research project (`http://chericpu.org`)

Jun–Sep 2013 | **Microsoft Development Center Serbia** | Belgrade, Serbia
Intern Software Design Engineer

- ∼ SQL Server Team | Service Foundation Division
- ∼ Worked on development of the prototype for a new C♯ and WCF-based stress testing tool on SQL Azure production clusters

Publications

December 2016 | **X-CNN: Cross-modal convolutional neural networks for sparse datasets**
Veličković, P., Wang, D., Lane, ND. and Liò, P.
The 7th IEEE Symposium Series in Computational Intelligence (IEEE SSCI 2016)

June 2016 | **Viral: Real-world competing process simulations on multiplex networks**
Veličković, P., Ivašković, A., Lau, S. and Stanojević, M.
The 1st Belgrade Bioinformatics Conference (BelBi 2016)

April 2016 | **muxstep: an open-source C++ multiplex HMM library for making inferences on multiple data types**
Veličković, P. and Liò, P.
Bioinformatics, doi:10.1093/bioinformatics/btw196

December 2015 | **Molecular multiplex network inference using Gaussian mixture hidden Markov models**
Veličković, P. and Liò, P.
Journal of Complex Networks, doi:10.1093/comnet/cnv029

Honours & Awards

November 2016 | **ACM-ICPC NWERC 2016 — Silver Medal** | Bath, United Kingdom
Association for Computing Machinery

January 2016 | **Finalist** | Cambridge, United Kingdom
Hack Cambridge—Major League Hacking event

- ∼ Member of team Viral: `http://devpost.com/software/viral`
- ∼ Nominated as one of the top 7 projects (out of ∼100 participating teams)

November 2014 | **ACM-ICPC NWERC 2014 — Bronze Medal** | Linköping, Sweden
Association for Computing Machinery

July 2014 | **Senior Scholar** | Cambridge, United Kingdom
Trinity College, University of Cambridge

- ∼ Elected due to high performance in Part IB of the Computer Science Tripos
- ∼ Re-elected for another year (in July 2015) due to high performance in Part II

July 2013 | **Junior Scholar** | Cambridge, United Kingdom
Trinity College, University of Cambridge

- ∼ Elected due to high performance in Part IA of the Computer Science Tripos

~ June 2012 | **Best Final-year project in the area of Informatics** — Belgrade, Serbia
Matematička gimnazija

~ Awarded for the best Informatics-related project in the school's 2012 generation

~ May 2012 | **Cambridge Overseas Trust Scholarship** — Cambridge, United Kingdom
Cambridge Commonwealth, European and International Trust

~ May 2012 | **Trinity Overseas Bursary** — Cambridge, United Kingdom
Trinity College, University of Cambridge

~ 2009–2012 | **Serbian High School Competition Awards** — Belgrade, Serbia
Mathematical and Physical Societies of Serbia

~ Serbian Olympiad in Informatics - Third Prize (May 2012)
~ National Competition in Informatics - Second Prize (April 2012)
~ National Competition in Physics - Honourable Mention (April 2011)
~ National Competition in Mathematics - Honourable Mention (March 2010)
~ National Competition in Physics - Honourable Mention (April 2009)

Skills

●●●●● Proficient | C/C++, C♯, Python, Java, OCaml, Keras, TensorFlow, LaTeX, PGF/Ti*k*Z, `git`, Unix
Algorithms, Data Structures, Machine Learning, Bioinformatics, Teaching

●●●●○ Experienced | MATLAB, SQL, Pascal, SystemVerilog, Bluespec, Altera Quartus, `vim`
Theoretical Computer Science, Numerical Analysis

●●●○○ Skilled | Rust, ML, Prolog, Mercurial, `gnuplot`
Natural Sciences, Probability, Kernel Programming (Linux)