James Newling

Current location:	Bristol, United Kingdom	Email:	james.newling@gmail.com
Citizenship :	South Africa and United Kingdom	Website:	**https://newling.github.io**
		Github:	**https://github.com/newling**

Research Interests

Machine learning, numerical algorithms, high performance computing

Programming

Very familiar with modern C++, Python, numerical and graph algorithms. Familiar with OpenCL, deep learning frameworks, neural network compilers.

Education

February 2018, **PhD in Computer Science** at École Polytechnique Fédérale de Lausanne (EPFL)

June 2013, **MSc in Complexity Science** at École Polytechnique (Paris) and Warwick University

June 2011, **Masters in Applied Mathematics** at The University of Cape Town

December 2009, **Honours Degree in Mathematics and Statistics** at The University of Cape Town

Employment

Since May 2020, Software Team Lead, Graphcore

March 2018 - May 2020, Software Engineer, Graphcore

September 2013 - Febraruy 2018 Research Assistant at the Idiap Research Institute

September 2016 - December 2016, Intern at Advanced Micro Devices (Austin, TX)

April 2013 - September 2013, Research Assistant in the Mukherjee Lab for Statistical Systems Biology, Netherlands Cancer Institute

February 2010 - June 2010, Maths Lecturer in Non-linear Optimization at the University of Cape Town

Machine Learning Conference Proceedings

J. Newling and F. Fleuret. **K-Medoids For K-Means Seeding**. In Proceedings of the International Conference on Neural Information Processing Systems (NIPS), 2017.

J. Newling and F. Fleuret. **A Sub-Quadratic Exact Medoid Algorithm**. In Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS), pages 185-193, 2017. ***Best paper award***.

J. Newling and F. Fleuret. **Nested Mini-Batch K-Means**. In Proceedings of the International Conference on Neural Information Processing Systems (NIPS), pages 1352-1360, 2016.

J. Newling and F. Fleuret. **Fast K-Means with Accurate Bounds**. In Proceedings of the International Conference on Machine Learning (ICML), pages 936-944, 2016

Open source software

MIOpenGEMM. OpenCL GEMM (matrix multiplication) kernels, auto-tuning, and API. I started this project while on internship at AMD in October 2016. MIOpenGEMM is currently used by AMD's machine learning library, MIOpen.

zentas and **eakmeans**. Partitional clustering software projects related to my PhD work.

Selected University Courses

École Polytechnique Fédérale de Lausanne : Advanced Algorithms, Topics in Theoretical Computer Science, Mathematics of Data, Statistical Physics for Computer Science, Topics on Datacenter Design

Warwick University : Algorithms, Mathematical Biology, Theoretical Neuroscience, Scientific Computing, Fundamentals of Modern Statistical Inference

École Polytechnique : Complex Systems, Dynamical Systems, Numerical ODEs and SDEs, Data Minimg, Statistical Learning, Signal Processing, Random Models in Evolution

University of Cape Town : Applied Mathematics (I, II, IV), Computer Science (Ia), Economics (I), Mathematics (I, II, III), Physics (I, II), Statistics (I, II, III)