

PAOLO VIVIANI

PhD – Research Engineer

Torino, ITALY

@ paolo.vivi@gmail.com

paolviviani.github.io



EDUCATION

Master's Degree in Theoretical physics

University of Torino, 104/110

2015

Collegio Universitario "R. Einaudi", Torino

Scholarship winner: "Piano Lauree Scientifiche 2008", granted by Società Italiana di Fisica.

Ph.D. in Computer Science

University of Torino, Computer Science Dept.

2015 – 2019

Torino, IT

Thesis: *Deep Learning at Scale with Nearest Neighbours Communications*.
Supervisor: Marco Aldinucci. Funded by Noesis Solutions.

- Co-supervisor of one M.Sc. Thesis

EXPERIENCE

Noesis Solutions

Research Engineer

April 2015 – present

Novara, IT

- Development of **machine learning modelling methodologies for engineering applications**.
- Re-definition of the internal stack (C++, Python) for scientific computing, with focus on performance and maintainability.
- Cloud and container technologies exploitation.
- Supervisor of one internship.
- Re-designed company-wide source code management workflow.
- **Technical lead for the following research projects**. Non-technical tasks included presentations to European Commission reviewers and reporting activities.

Funded Research Projects

MACH – ITEA2 project

April 2015 – December 2016

itea3.org/project/mach.html

Fortissimo 2 – H2020-FoF project

February 2016 – October 2018

www.fortissimo-project.eu

CloudFlow – FP7-I4MS project

March 2016 – May 2017

www.eu-cloudflow.eu

Blockchain for online Service Security – IMEC-ICON Flemish project

March 2018 – November 2019

VaProFam – FlandersMake-ICON Flemish project

February 2019 – ongoing

DC-CDS – FlandersMake-ICON Flemish project

April 2019 – ongoing

MAIN INTERESTS



High Performance Computing



Machine Learning



Containers and Cloud technologies



SKILLS

Parallel Computing

GPU Computing

Cloud technologies

Machine Learning



Programming

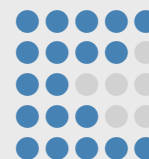
C++

Python

CUDA

Fortran

Git



Soft

Presentations

Communication of results

Formalization of requirements

Factorization of problems



Tools

Keras

MxNet

Pandas

BLAS/Lapack

Apache Spark

Openstack

PBS/Slurm

Docker

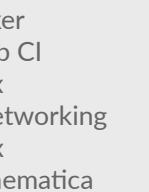
Gitlab CI

Linux

IP Networking

Latex

Mathematica



CISCO CCNA course completed in 2008.



LANGUAGES

Italian



English



French



Publications


1. Reniers, V., Gao, Y., et al. *Authenticated and Auditable Data Sharing via Smart Contract in Proceedings of the 35th ACM/SIGAPP Symposium on Applied Computing* (ACM, Brno, Czech Republic, 2020), 1–8.
2. Drocco, M., Viviani, P., Colonnelli, I., Aldinucci, M. & Grangetto, M. *Accelerating spectral graph analysis through wavefronts of linear algebra operations in Proc. of 27th Euromicro Intl. Conference on Parallel Distributed and network-based Processing (PDP)* (IEEE, Pavia, Italy, 2019), 9–16.
3. Reniers, V., Van Landuyt, D., et al. *Analysis of Architectural Variants for Auditable Blockchain-based Private Data Sharing in Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing* (ACM, Limassol, Cyprus, 2019), 346–354.
4. Viviani, P. *Deep Learning at Scale with Nearest Neighbours Communications* PhD thesis (Computer Science Department, University of Torino, Sept. 2019).
5. Viviani, P., Drocco, M., Baccega, D., Colonnelli, I. & Aldinucci, M. *Deep Learning at Scale in Proc. of 27th Euromicro Intl. Conference on Parallel Distributed and network-based Processing (PDP)* (IEEE, Pavia, Italy, 2019), 124–131.
6. Aldinucci, M. et al. *HPC4AI, an AI-on-demand federated platform endeavour in ACM Computing Frontiers* (Ischia, Italy, May 2018).
7. Tordini, F., Aldinucci, M., Viviani, P., Merelli, I. & Liò, P. *Scientific Workflows on Clouds with Heterogeneous and Preemptible Instances in Proc. of the Intl. Conference on Parallel Computing, ParCo 2017, 12-15 September 2017, Bologna, Italy* (IOS Press, 2018).
8. Viviani, P., Drocco, M. & Aldinucci, M. *Pushing the boundaries of parallel Deep Learning - A practical approach. CoRR abs/1806.09528* (2018).
9. Viviani, P., Drocco, M. & Aldinucci, M. *Scaling Dense Linear Algebra on Multicore and Beyond: a Survey in Proc. of 26th Euromicro Intl. Conference on Parallel Distributed and network-based Processing (PDP)* (IEEE, Cambridge, United Kingdom, 2018).
10. Viviani, P., Aldinucci, M., d'Ippolito, R., Lemeire, J. & Vucinic, D. in *Improved Performance of Materials: Design and Experimental Approaches* 93–106 (Springer International Publishing, Cham, 2018).
11. Viviani, P., Torquati, M., Aldinucci, M. & d'Ippolito, R. *Multiple back-end support for the Armadillo linear algebra interface in In proc. of the 32nd ACM Symposium on Applied Computing (SAC)* (Marrakesh, Morocco, Apr. 2017), 1566–1573.
12. Viviani, P. *Parallel Computing Techniques for High Energy Physics* MA thesis (Physics Department, University of Torino, 2015).

Other

- Four PhD schools attended
- Program Committee member, *Euromicro International Conference on Parallel, Distributed, and Network-based Processing (PDP)* for 2018 (also session chair), 2019 and 2020.
- Program Committee member, *Parallel Numerical Methods and Libraries for Heterogeneous Multi/Manycores (PDP2018 and PDP2019)*
- Program Committee member, *Artifact Evaluation, Euro-Par 2018*
- Program Committee member, *16th IEEE International Conference on Scalable Computing and Communications (ScalCom 2016)*

Avid traveller and photographer.

Former track & field athlete, now turned to playground basketball.

 paoloph.myportfolio.com

Photographer

OASIS Project

 2013

 Kharga, Egypt

Archaeological expedition funded by Fondazione Collegio delle Università Milanesi and American University in Cairo.

Photographer


Collegio Universitario "R. Einaudi"


 2012 – 2014

 Torino, Italy

Exchange student

Tauranga Boy's College

 2006

 Tauranga, New Zealand


Scuba Diver

PADI Advanced Open Water Diver

 From 2004


Track and Field athlete

Javelin Throw – Regional and National competitions

 1997 – 2012

Volunteer


IAAF Athletics World Championship


 2009

 Berlin, Germany

English Course

'General English Super Intensive' C1 level course at Alpha College of English

 2012

 Dublin, Ireland

I authorize the use of my personal data in accordance with Italian Privacy Protection Law (30/06/2003, n.196/03), and GDPR (UE 2016/679)