

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



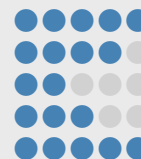
SKILLS

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. 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. 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., 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).
9. Viviani, P., Drocco, M. & Aldinucci, M. *Pushing the boundaries of parallel Deep Learning - A practical approach*. CoRR **abs/1806.09528** (2018).
10. 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).
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

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accordance with Italian Privacy Protection Law
(30/06/2003, n.196/03), and GDPR
(UE 2016/679)