Jacopo Canton

Personal Information

Place and Date of Birth:	Merate (LC), Italy — 1 March 1989
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Profile

Detail oriented researcher with a passion for complex physics simulations, nonlinear chaotic systems, and machine learning. Well-versed in writing clean and maintainable code. Seeking to take a career step in the R&D engineering industry.

Employment and Education

ETH Zürich (CH) 3/2020 - current
Post-doc with ETHZ fellowship at IAC.

- Developed numerical analysis tools to investigate the resolution-dependent feedback between thermodynamical processes and clouds structure and evolution, directly interfacing with the COSMO model.

ETH Zürich (CH) 8/2018 - 2/2020
Post-doc with ETHZ fellowship at CSE-lab.

- Developed a Machine Learning model to improve fluid simulation performance on coarse grids. Employed Reinforcement- and Supervised Learning to develop the model. Coupled in-house C++ reinforcement learning software with Fortran CFD codes.
- Teaching assistant for HPC.

KTH Stockholm (SWE) 3/2014 - 6/2018
PhD student at the FLOW institute.

- Thesis on the numerical study of Transitional and Turbulent Flow in bent pipes. Expanded the Spectral Elements simulation codes (Fortran & Python), collected and analysed the results, leading to eight journal articles and sixteen conference presentations.
- Won the GKN aerospace award in mechanics.
- Awarded two travel scholarships.
- Collaborated with Tetra Pak R&D.
- Teaching assistant for CFD.
- Co-supervisor of three Masters theses.

Argonne National Laboratories (USA) 6-7/2016
Visiting scholar researcher.

- Participated in the implementation of nonlinear adjoints in Nek5000 (Fortran Spectral Element CFD code).

MSc Aerospace Engineering 9/2008 - 12/2013
Politecnico di Milano (IT) 106/110.

- Thesis on the development of a Finite Element C & Fortran simulation code for flow stability analysis, leading to one journal article.

Nettronix (IT) 1-3/2012
Internship: data analysis and optics design.

- Development of a software for monitoring TV satellites and enabling automated design inputs.

Other projects

pymech (on GitHub)
Python package for manipulating meshes and data fields of CFD codes. Ongoing development in collaboration with fellow PhD students, started in 2017.

Mech thesis (on GitHub)
LaTeX class and template for PhD theses. Developed in collaboration with a fellow PhD student in 2016. Used by all following PhDs at the Mech. department of KTH.

RL with MuJoCo
Hands-on Reinforcement Learning tutorial in Python usign PyTorch and MuJoCo. Co-developed with CSE-lab colleagues.

Skills

Programming languages & software
Proficient: Python, Fortran, Git, VisIt, ParaView, COSMO, Nek5000. *Intermediate*: C++, OpenFOAM, MPI, OpenMP, bash. *Prior experience*: Comsol.

Languages
Native: Italian. *Proficient*: English. *Basic*: French, Swedish, German.

Soft skills
Expert in analysing and breaking down complex problems and designing effective, robust solutions. Excellent learner and teacher, able to explain complex subjects to a non-technical audience. Capable communicator, experienced in listening carefully to feedback from coworkers and adapting my strategy.

Online profiles

Website Google Scholar GitHub LinkedIn