Edoardo Alinovi

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Experience

04/2019 – PRESENT
CFD R&D Engineer / Mclaren F1 Team

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01/2019 - PRESENT
Open source CFD software developer

- Developed from scratch FLUBIO-PETSc (https://gitlab.com/alie89/flubio-code/fvm),
  a parallel, unstructured, finite volume Navier-Stokes solver for incompressible flows. The
  solver was initially developed to provide the fluid mechanics group at university of Genova
  with a proprietary CFD solver. As of January 2021, the solver is publicly available and used by
  many students and researchers.

11/2017 – 04/2019
Associate Researcher and Lecturer / University of Genova

- Responsible for mentoring students during their theses work and lecturing in the course of
  fluid mechanics (2nd year, mechanical engineering).

11/2014 – 11/2017
PhD Fellow/ University of Genova

- PhD scholarship winner within the Fincantieri innovation challenge framework.
- Research highlights: new BEM for two phase flows with interfaces, new onset of wall vortex
  instability for boundary layer on low friction surfaces, original research on micro-textured
  surfaces for skin friction drag reduction using multiscale approach.

10/2013 – 04/2014
Visiting Researcher / City University of London

- Numerical investigation of drag reduction methods by fluid-structure interactions founded
  by the European project PELskin.

Education

05/2018
Doctor of Philosophy / University of Genova

- PhD thesis: "*modelling the flow past superhydrophobic and liquid impregnated surfaces.*"

07/2014
MSc in mechanical engineering / University of Genova

- MSc thesis: "Control of bluff bodies' wake using flexible filaments", grade: 110/110 with
  honours.

12/2011
BSc in mechanical engineering / University of Genova

- BSc thesis: *"An innovative approach to energy harvesting through vortex induce vibrations."*

Skills and development tools

Programming languages	Python, C++, Fortran, Java, Bash, MPI, Matlab
CFD solvers	OpenFoam, Star-ccm+, Fluent, Comsol, Nektar++
Meshers	Ansa, Star mesher, Ansys mesher, SnappyHexMesh, Pointwise
Post processing	Paraview, Periview, Tecplot360, VisIt
Operative systems	Linux, Windows
HPC	HPC environment, Job schedulers (SLURM, PBS)
Spoken languages	Italian, English

Certifications

- **Chartered engineer -** Italian national council of engineers.
- **Continuing development**: https://www.edoardoalinovi.com/pubs

Pubblications and conferences

- *The PELskin project: part IV - control of bluff body wakes using hairy filaments,* Meccanica, Vol. 52, pp. 1503–1514, 2017.
- **Stability of the flow in a plane microchannel with one or two superhydrophobic walls,** Phys. Rev. Fluids, Vol. 2, 013901, 2017.
- *A boundary element method for Stokes flows with interfaces*, J.Comput. Phys., Vol. 356, pp. 261-281, 2018.
- *Fractal riblets*, AIAA J., Vol. 56, 2018
- *Apparent slip and drag reduction for the flow over superhydrophobic and lubricant-impregnated surfaces*, Phys. Rev. Fluids, Vol. 3, 124002 pp. 2108-2112, 2018.
- *FLUBIO - An unstructured, parallel, finite-volume based Navier-Stokes and convection-diffusion like equations solver for teaching and research purposes*, SoftwareX, Volume 13, 100655
- **Conferences and invited talks at** https://www.edoardoalinovi.com/pubs

References

Available upon request