Andrea Penza

Curriculum Vitae

15 Friary Gardens
MK16 0JZ Newport Pagnell
Buckinghamshire, UK

(+44) 7428 838583
✉ *andreapenza.12@gmail.com*
in *andrea-penza-5b7b5050*
ⓢ *andreapenza.12*

Info

Born	April 8, 1985 in Milan (Italy)
Citizenship	Italian
Marital Status	Single
Driving License	Car (B)
Notice period	6 months

Profile

Italian CFD Engineer with over 6 years of experience in Motorsport (Le Mans and Formula 1) and America's Cup competition. Lived and worked across three different countries so far, I am ambitious, open-minded, flexible thinker and worker. Fully focus on achieving targets and success.

Working Experience

Feb 2017 - present **CFD Tools & Methods Engineer**, *Red Bull Racing Formula One Team*, Milton Keynes (UK).

- Develop and maintain highly evolved ANSA CFD pre-process workflow. Collaborate with ANSA software developers to further improve surface meshing in-house process.
- CFD non-standard processes which require development from scratch, automation, and post-processing analysis.
- Planning tests and evaluating latest CFD technologies on the market.

Apr 2016 - Jan 2017 **CFD Process Engineer**, *Manor Racing Team*, Banbury (UK).

- Continous development of our highly automated OpenFOAM-based CFD Process
- CFD Process optimization to improve CFD accurancy and turnaround time
- Advanced remeshing strategies snappyHexMesh-based
- Releasing new Postprocessing tools to accomodate requests of CFD users

Apr 2014 – Mar 2016 **Aerodynamicist & CFD Methodology Engineer**, *Toyota Motorsport GmbH*, Cologne (Germany).

1. **As CFD Methodology:**
   - Successfully released OpenFOAM automated CFD process to replace Star-CD methodology
   - Develop and update CFD scripting for Toyota Hybrid LMP1 car, as well as for customer WTCC, LMP3 and Formula4 cars
   - In charge for CFD vs WT correlation. Creation of an automated process based on Python
   - Maintain and update in house VTK-based python automated post-processing
   - Main developer of CFD database concept from scratch

2. **As Aerodynamicist:**
   - CFD Aero development working in Front and Rear groups. Front brake cooling CFD development.
   - 3D surface parametric design
   - Wind Tunnel shifts as Aerodynamicist developing Toyota LMP1 2015 and 2016 car

Jul 2012 – Mar 2014	**CFD Engineer**, *Cineca*, SuperComputing Applications and Innovation Department, Segrate (Italy).

- Investigation regarding usability of OpenFOAM at Luna Rossa Challenge America's Cup Team
- Released fully-automated OpenFOAM-based CFD Process for hydrodynamic multiphase applications
- Complex geometries meshing using snappyHexMesh (AC72 multi-hull and appendages) and Pointwise (fully structured wingsail mesh)
- Non uniform bondary conditions implemented (wind twist)
- Deep HPC knowledge having been based at Cineca where production cluster was hosted

Oct 2012 - Feb 2014	**Lecturer**, *Politecnico di Milano*, Milano (MI).

Academic tutor lecturer for the course **"Instability and Turbulence"**.
- Writing of C++ Trilinos code for CFD application
- setup of OpenFOAM RANS cases
- post-processing of DNS data in Paraview

Education

2008 - 2012	**Master of Science**, *Politecnico di Milano*, Milano, Italy.

Aeronautical Engineering - Aerodynamic specialization
- **MSc Thesis**: *"Linear Stability of 2D Incompressible Flows using Trilinos"*, An open-source C++ based CFD software for flow stability investigations

2004 - 2008	**Bachelor's Degree**, *Politecnico di Milano*, Milano, Italy.

Aerospace Engineering

Computer & Technical skills

CFD	OpenFOAM, Star-CD & Star-CCM+, Ansys Fluent
Wind Tunnel	WT session shifts developing LMP1 2015 and 2016 car at Toyota Motorsport WT1 (Cologne)
Meshing	snappyHexMesh, ANSA, pro-STAR & CCM+, TGrid, Pointwise
CFD tools	Catia v5, NX, SolidEdge
Post-pro	VTK library, Paraview, Periscope
Programming	Python, C/C++ languages
Version control	SVN, Mercurial
Miscellaneous	Enovia VPM, Trilinos library, Linux OS, Mac OS X, Windows, MS Office, SAP

Conferences, Lectures & Courses

May 2017	"Beta CAE User Conference", Thessaloniki (GRE) - attender
Dec 2015	"Aerodynamic Development in Motorsport", Politecnico di Milano, Milan (ITA) - **lecturer**
Oct 2014	"ESI OpenFOAM User Conference 2014", Berlin (GER) - attender
Aug 2014	"Catia v5, in house training at Toyota Motorsport", Cologne (GER) - attender
Mar 2014	"HPC enabling OpenFOAM for CFD Applications", CINECA, Bologna (ITA) - **lecturer**
Jul 2013	"OpenFOAM advanced training by OpenCFD-ESI", Paris (FRA) - attender
Jun 2013	"PRACE 12th Summer School of Scientific Visualization", CINECA, Milan (ITA) - **lecturer**
Apr 2013	"ESI OpenFOAM User Conference 2013", Frankfurt (GER) - attender
Nov 2012	"HPC Enabling OpenFOAM for CFD Applications", CINECA, Bologna (ITA) - **lecturer**
Oct 2012	"Pointwise: a high level meshing tool for CFD applications", Milan (ITA) - attender
Oct 2012	"Basic Python programming for scientific applications", Milan (ITA) - attender
Jun 2012	"European Trilinos User Group Meeting", Ecole Polytechnique Fédérale de Lausanne, Lausanne (SUI) - attender
May 2012	"Introduction to CFD simulations using OpenFOAM", Milan (ITA) - attender

Languages

Italian 🇮🇹 **Mothertongue**

English 🇬🇧 **Fluent** - professional speaking thanks to last 4 years spent working abroad
TOEIC certification achieved

German 🇩🇪 **Good**
Zertifikat Deutsche at Goethe Institut (Milan) certification achieved

Interests & Attitude

I love Motorsport and every competition involving Aerodynamics. Attracted by every aspects of CFD. Former basketball player, Rotaract Club co-founder and vice president, passionate about travelling and meeting new cultures and people

Signature