europass Curriculum vitae

## PERSONAL INFORMATION Ettore Fadiga

## WORK EXPERIENCE

September 2015 – September 2017

### Tutor/Teacher

Formando Percorsi
Via Boccaccio 11-13, 44121, Ferrara, Italy

Tutoring high school students in scientific subjects.
Teaching mathematics and physics courses finalized to university admission tests preparation.

## EDUCATION AND TRAINING

2018–2021

### PhD candidate - Numerical methods applied to ORC systems and their components

ISCED 6

Department of Engineering (DE), University of Ferrara, Italy

My PhD topic regards the numerical analysis of Organic Rankine Cycle (ORC) systems and their components employing open-source software suites. I have worked on the development of numerical methods for modelling real gas properties and studying positive displacement machines.

2019

### Visiting PhD student - Computational methods for twin-screw machines

Centre for Compressor Technology, City, University of London, London, United Kingdom

2016–2018

### M.S. in Mechanical Engineering

Department of Engineering (DE), University of Ferrara, Italy

- Energy systems
- Fluid Dynamics and Turbomachinery
- Composite and polymeric materials
- Mechanics of materials
- Dynamics, vibration and signal processing
- Statistics and Design of Experiments

2018

### Tutor - Composite materials course

Department of Engineering (DE), University of Ferrara, Italy

2011–2016

### B.S. in Mechanical Engineering

Department of Engineering (DE), University of Ferrara, Italy

## PERSONAL SKILLS

Mother tongue: Italian

Other languages

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|---|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | C1 | C2 | B2 | B2 | C1 |

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Digital competences

| SELF-ASSESSMENT | | | | |
|---|---|---|---|---|
| Information Processing | Communication | Content creation | Safety | Problem solving |
| Proficient user | Proficient user | Independent user | Proficient user | Proficient user |

Digital competences - Self-assessment grid

Computer skills
- OS: Linux and bash, Microsoft Windows OS
- Productivity software (Microsoft Office and Open-source tools), LaTex
- Programming languages: C++, Python, Fortran (basics), Octave
- CFD software: OpenFOAM, Ansys CFX, Converge, Simerics MP+
- CAD software: Solidworks, SALOME

Driving licence: B

## PUBLICATIONS


[1] N. Casari, **E. Fadiga**, M. Pinelli, S. Randi, A. Suman, and D. Ziviani. “Investigation of flow characteristics in a single screw expander: A numerical approach”. In: *Energy* 213 (2020).

[2] G. Cavazzini, F. Giacomel, G. Ardizzon, N. Casari, **E. Fadiga**, M. Pinelli, A. Suman, and F. Montomoli. “CFD-based optimization of scroll compressor design and uncertainty quantification of the performance under geometrical variations”. In: *Energy* 209 (2020).

[3] **E. Fadiga**, N. Casari, A. Suman, and M. Pinelli. “CoolFOAM: The CoolProp wrapper for OpenFOAM”. In: *Computer Physics Communications* 250 (2020).

[4] N. Casari, **E. Fadiga**, M. Pinelli, A. Suman, and D. Ziviani. “CFD simulations of single- and twin-screw machines with openfoam”. In: *Designs* 4.1 (2020), pp. 1–15.

[5] **E. Fadiga**, N. Casari, A. Suman, and M. Pinelli. “Fluid thermophysical properties modelling in an opensource platform: CoolFOAM”. In: *ECOS 2020 - Proceedings of the 33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems* (2020), pp. 123–132.

[6] **E. Fadiga**, N. Casari, A. Suman, and M. Pinelli. “Structured mesh generation and numerical analysis of a scroll expander in an open-source environment”. In: *Energies* 13.3 (2020).

[7] N. Casari, **E. Fadiga**, M. Pinelli, A. Suman, A. Kovacevic, S. Rane, and D. Ziviani. “Numerical investigation of oil injection in a Roots blower operated as expander”. In: *IOP Conference Series: Materials Science and Engineering* 604.1 (2019).

[8] N. Casari, **E. Fadiga**, M. Pinelli, S. Randi, and A. Suman. “Pressure pulsation and cavitation phenomena in a micro-ORC system”. In: *Energies* 12.11 (2019).

[9] **E. Fadiga**, N. Casari, A. Suman, M. Pinelli, and D. Ziviani. “Multi-component numerical investigation of a micro Organic Rankine Cycle”. In: *IIR Rankine Conference 2020* (2020).