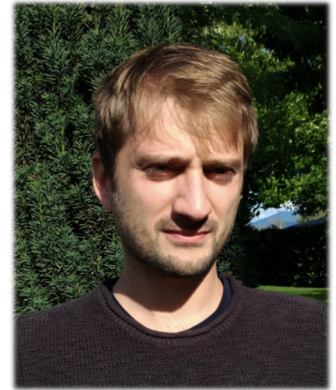


CURRICULUM VITAE

Giulio Gori, PhD

Post-doctoral fellow, DeFI team, INRIA/Centre de Mathématiques Appliquées, École Polytechnique, Institut Polytechnique de Paris.
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EDUCATION

- 2019 Ph.D. Aerospace Engineering
Thesis: *Non-Ideal Compressible Fluid-Dynamics: Developing a Combined Perspective on Modeling, Numerics and Experiments.*
Department of Aerospace Science and Technology, Politecnico di Milano, Italy
Advisor: Prof. Alberto Matteo Attilio Guardone
- 2013 Master Degree in Aeronautical Engineering
Thesis: *PolMIce: un ambiente di simulazione per la previsione dell'accrescimento di ghiaccio su velivoli.*
Department of Aerospace Science and Technology, Politecnico di Milano, Italy
Supervisor: Prof. Alberto Matteo Attilio Guardone
- 2010 Bachelor Degree in Aerospace Engineering
Department of Aerospace Science and Technology, Politecnico di Milano, Italy
- 2007 High school diploma at Liceo Scientifico Amedeo di Savoia duca di Aosta, Pistoia, Italy

CURRENT AND PREVIOUS POSITIONS

- 2017 – UTOPIAE MSCA-ITN Early Stage Researcher
INRIA/ Centre de Mathématiques Appliquées, École Polytechnique, IPP, France
- 2014 – 2017 Research fellow
CREALab/Department of Aerospace Science and Technology, Politecnico di Milano, Italy

MOBILITY

- 2019 Visiting fellow
Von Karman Institute for Fluid Dynamics, Belgium (4 months)
- 2018 Visiting fellow
Center for Turbulence Research at Stanford University (1.5 months), Palo Alto, CA, USA
- 2016 Visiting Ph.D. candidate,
UT Twente, Faculty of Engineering Technology, Enschede, Netherlands (3 months)
- 2014 Visiting fellow
Aerospace Design Lab (ADL) at Stanford University (1 month), Palo Alto, CA, USA

COMMISSIONS OF TRUST

- 2015 – Invited referee for the following international scientific Journals: Journal of Computational Physics, Physics of Fluids, Mathematics and Computers in Simulations, Applied Mathematics and Computation.
- 2014 – Co-supervisor, tutoring master students in authoring their final thesis.
- 2014 – 2017 Coordinator of the SU2 open-source CFD solver User Group at Politecnico di Milano, Italy.

PUBLICATIONS RECORD

My publication record includes more than 20 scientific contributions delivered in a time frame of about 5 years. Among these contributions, 8 are peer reviewed Journals, 10 are peer reviewed conference proceedings whereas the remaining are non-reviewed contributions. Publications covers a wide range of topics, spanning from in-flight ice accretion, non-ideal compressible fluid flows, atmospheric entry for space applications, uncertainty quantification and turbomachinery design.

Peer Reviewed Journals

- **G. Gori**, M. Zocca, A. Guardone, O. Le Maître and P. M. Congedo, *Bayesian Inference of Thermodynamic Models from Vapor Flow Experiments*, Computer & Fluids, Vol. 205, 104550, 2020.
- N. Razaaly, G. Persico, **G. Gori** and P.M. Congedo, *Quantile-Based Roust Optimization of a Supersonic Nozzle for Organic-Rankine Cycle Turbines*, Applied Mathematical Modelling, Vol. 82, pp. 802-824, 2020
- **G. Gori**, M. Zocca, G. Cammi, A. Spinelli, P. M. Congedo and A. Guardone, *Accuracy Assessment of the Non-Ideal Computational fluid Dynamics Model for Siloxane MDM from the open-source SU2 suite*, European Journal of Mechanics-B/Fluids, Vol. 79, pp. 109-120, 2019.
- **G. Gori**, A. Guardone, *VirtuaSchlieren: a Hybrid GPU/CPU-based Schlieren Simulator for Ideal and Non-Ideal Compressible-Fluid Flows*. Journal of Applied Mathematics and Computation, Vol. 319, pp. 647-661, 2018.
- D. Vimercati, **G. Gori**, A. Guardone, *Non-Ideal Oblique Shock Waves*, Journal of Fluid Mechanics, Vol. 847, pp. 266-285, 2018. (6 citations)
- **G. Gori**, G. Parma, M. Zocca and A. Guardone, *Local Solution to the Unsteady Stefan Problem for In-Flight Ice Accretion Modeling*, Vol. 55, pp. 251-262, 2018.
- M. Zocca, **G. Gori** and A. Guardone, *Blockage and Three-Dimensional Effects in Wind-Tunnel Testing for Ice Accretion over Wings*, Journal of Aircraft, Vol. 54, pp. 759-767, 2017.
- **G. Gori**, M. Zocca, M. Garabelli, A. Guardone and G. Quaranta, *PoliMice: a Simulation Framework for Three-Dimensional Ice Accretion*, Journal of Applied Mathematics and Computation, V. 267, pp. 96-107, 2015.

Chapter in Books

- J. Reis, **G. Gori**, P.M. Congedo and O. Le Maître, *Introduction to Spectral Methods for Uncertainty Quantification*, Chapter in *Optimization Under Uncertainty with Applications to Aerospace Engineering*, Massimiliano Vasile, Springer Nature, 2020. (Submitted, in editing process)

Peer Reviewed Conference Proceedings

- **G. Gori**, N. Razaaly, G. Iaccarino and P. M. Congedo, *Structural Uncertainty Estimation of Turbulence Models in Organic Rankine Cycle Applications*, proceeding at the ORC2019 conference, Athens, Greece, 2019.
- N. Razaaly, **G. Gori**, G. Iaccarino, P. M. Congedo, *Optimization of an ORC Supersonic Nozzle Under Epistemic Uncertainties due to Turbulence Models*, proceeding at the Global Power and Propulsion Society GPPS2019 Conference, Zurich, Switzerland, 2019.
- N. Razaaly, **G. Gori**, O. Le Maître, G. Iaccarino, P. M. Congedo, *Robust Optimization of Turbine Cascade for Organic Rankine Cycles Operating with Siloxane MDM*, proceeding of the Summer Program at the Center for Turbulence Research, Stanford University, California, USA, 2018.

- **G. Gori**, M. Zocca, G. Cammi, A. Spinelli and A. Guardone, *Experimental Assessment of the Open-Source SU2 CFD suite for ORC Applications*, Energy Procedia, Vol. 129, pp. 256-263, 2017.
- D. Vimercati, **G. Gori**, A. Spinelli and A. Guardone, *Non-Ideal Effects on the Typical Trailing Edge Shock Pattern of ORC turbine Blades*, Energy Procedia, Vol. 129, pp. 1109-1116, 2017.
- P. Molesini, **G. Gori** and A. Guardone, *An Analysis of fast-Response Pressure Probes Dynamics for ORC Power Systems*, Energy Procedia, Vol. 129, pp. 264-271, 2017.
- M. Pini, S. Vitale, P. Colonna, **G. Gori**, A. Guardone, T. Economon, J. J. Alonso and F. Palacios, *SU2: the open-source software for Non-Ideal Compressible Flows*, Journal of Physics: Conference Series, Vol. 821, 2017. **G. Gori**, P. Molesini, G. Persico and A. Guardone, *Non-Ideal Compressible-Fluid Dynamics of Fast-Response Pressure Probes for Unsteady Flow Measurements in Turbomachinery*, Journal of Physics: Conference Series, Vol. 821, 2017.
- **G. Gori**, D. Vimercati and A. Guardone, *Non-Ideal Compressible-Fluid Effects in Oblique Shock Waves*, Journal of Physics: Conference Series, Vol. 821, 2017.
- **G. Gori**, A. Guardone, S. Vitale, A. Head, M. Pini, P. Colonna, *Non-Ideal Compressible-Fluid Dynamics Simulations with SU2: Numerical Assessment of Nozzle and Blade Flows for Organic Rankine Cycle Applications*, proceeding of the 3rd International Seminar on ORC Power Systems, Brussels, Belgium, 2015.

Conference Proceedings

- **G. Gori**, A. Turchi, T. Magin, O. Le Maître and P. M. Congedo. *Exploring the Impact of the Initial Temperature Field Uncertainty on the Response of Ablative Materials*, proceeding at the International Conference on Flight Vehicles, Aerothermodynamics and Re-Entry Missions and Engineering, Bari, Italy, 2019.
- B. Arizmendi, T. Bellosta, A. del Val, **G. Gori**, M. O. Prazeres and J. Reis, *On Real-Time Management of On-Board Ice Protection Systems by Means of Machine Learning*, Proceeding at the AIAA Aviation Forum 2019, Dallas, Texas, USA, 2019.
- **G. Gori**, D. Vimercati and A. Guardone, *A Numerical Investigation of Oblique Shock Waves in Non-Ideal Compressible-fluid Flows*, proceeding at the 31st International Symposium on Shock Waves ISSW31, Nagoya, Japan, 2018.
- M. Zocca, **G. Gori**, O. Le Maître, P. M. Congedo and A. Guardone, *A Robust Experiment Design for the Investigation of Non-Ideal Compressible Fluid Flow Effects*, proceeding at the 7th European Conference on Computational Fluid Dynamics (ECFD7), Glasgow, United Kingdom, 2018.
- N. Razaaly, G. Persico, **G. Gori**, P. M Congedo, *Robust Optimization of a Supersonic ORC Turbine Cascade: a Quantile-Based Approach*, proceeding at the 7th European Conference on Computational Fluid Dynamics (ECFD7), Glasgow, United Kingdom, 2018.
- S. Vitale, **G. Gori**, M. Pini, A. Guardone, T. D. Economon, F. Palacios, J. J. Alonso and P. Colonna, *Extension of the SU2 Open-Source CFD Code to the Simulation of Turbulent Flows of Fluids Modelled with Complex Thermophysical Laws*, proceeding at the 22nd AIAA Computational Fluid Dynamics Conference, Dallas, Texas, USA, 2015.
- **G. Gori**, M. Zocca and A. Guardone, *A Model for In-flight Ice Accretion Based on the Exact Solution of the Unsteady Stefan Problem*, proceeding at the 7th AIAA Atmospheric and Space Environments Conference, Dallas, Texas, USA, 2015.

AWARDED FELLOWSHIPS

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| 2017 – 2020 | Early Stage Researcher Fellowship within the Marie Skłodowska-Curie Innovative Training Network H2020-MSCA-ITN-2016, Grant Agreement n. 722734, INRIA/Centre de Mathématiques Appliquées, École Polytechnique, Institut Polytechnique de Paris, France |
| 2015 – 2017 | Temporary Research Fellowship for Research Activities UOR DAER “Metodi numerici per la simulazione di correnti di fluidi comprimibili non-ideali” CREALab/Department of Aerospace Science and Technology, Politecnico di Milano, Italy |
| 2014 – 2015 | Temporary Research Fellowship for Research Activities UOR DAER “Simulazione numerica di correnti di gas densi con codici fluidodinamici per griglie chimera” CREALab/Department of Aerospace Science and Technology, Politecnico di Milano, Italy |

RESEARCH EXPEDITIONS LED

I successfully submitted a proposal to the Summer Program 2018 of the Center for Turbulence Research (CTR), at Stanford University, California, USA. I was responsible of leading a research project titled *On the calibration of turbulence models for a siloxane MDM in the Non-Ideal regime and application to the robust optimization of turbine cascades*, devoted to the development of innovative data-driven approaches for the calibration of molecular complex fluid models and for the robust optimization of Organic Rankine Cycle turbine blades.

FUNDINGS RECEIVED

Personal scholarship of \$ 3,550 to participate to the CTR Summer Program 2018 at Stanford University, CA, USA.

SUPERVISING ACTIVITY

Co-supervision of master students in developing their final MSc thesis at the Department of Aerospace Science and Technology of Politecnico di Milano:

- *Un Modello Semplificato per l'Accrescimento di Ghiaccio su Profili Alari Oscillanti*, D. Sangaletti, 2017.
- *Dynamics of Line-Cavity Systems for Ideal and Non-Ideal Compressible-Fluid Flows*, P. Molesini, 2016.
- *Generazione di Immagini Schlieren da Simulazioni Fluidodinamiche su Architettura GPU*, L. Virtuani, 2015.
- *A Model for In-Flight Ice Accretion Based on the Exact Solution of the Unsteady Stefan Problem*, G. Parma, 2015.
- *Effetti di Galleria nelle Misure di formazione di Ghiaccio su Velivoli*, M. Zocca, 2013.

CONFERENCE ORGANIZATION

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| 2019 | Member of Organizing Committee (Local Organizer), <i>UQOP: Uncertainty Quantification and Optimization</i> , March 18-20, Paris, France (https://uqop.sciencesconf.org) |
| 2017 | Staff member, <i>4th International Seminar on ORC Power Systems</i> , September 13-15, Milano, Italy (http://orc2017.fyper.com) |
| 2016 | Staff member, <i>NICFD-PP 2016: 1st International Seminar on Non-Ideal Compressible-Fluid Dynamics for Propulsion & Power</i> , October 20-21, Varenna, Italy (https://easychair.org/smart-program/NICFD2016/index.html) |

SOFTWARE DEVELOPMENT

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| PoliMice | Core developer member of the early versions of the integrated CFD-multiphase software for in-flight ice accretion (2012-2017). |
| SU2 | Member of the Principal Developers team of the SU2 open-source CFD solver for compressible and incompressible flows. |

Paris,
September 22nd 2020

