

Faniry Rahantamialisoa, Research Assistant

EDUCATION

- Mar 2019 — Jul 2022 **Ph.D in Mechanical Engineering, Università degli Studi di Perugia** Perugia, Italy
Ph.D Thesis: Development of a CFD framework for the simulations of dense spray dynamics under transcritical and supercritical conditions using the versatile Computation platform OpenFOAM.
Modules include:
 - Dynamics of fluids in engines, turbines and energy systems.
 - Multiphase models for dynamics of fluids
 - CFD with Open Source software
 - Analysis of engineering accidentsClose collaboration with Clean Combustion research center, KAUST Saudi Arabia with Prof Hong G. Im; FSB, University of Zagreb with Prof Hrvoje Jasak, Universidad of Oviedo and University of Brighton.
Visiting student for a period of 3 months at the University of Brighton, Advanced Propulsion Centre
- Jan 2016 — Jan 2018 **Master of Research in Applied Mathematics, University of Cape Town** Cape Town, South Africa
Thesis title: Complex Fluid Dynamical Computations via the Finite Volume Method.
Software used: OpenFOAM, python
- Aug 2014 — Jun 2015 **Structured Master in Mathematical Sciences, AIMS South Africa and University of Western Cape** Cape Town, South Africa
Graduated with Distinction (Cum Laud)
Modules include miscellaneous topics on Mathematics, Physics and Computer Sciences (Fluid Dynamic, Industrial Modeling, Numerical Analysis, Statistics, Differential Calculus)
Project Title: Constitutive Analysis of Shear Banding in Homogeneous 1D Simple Shear Flows of Viscoelastic fluids.
- Jan 2010 — Apr 2013 **Bachelor Degree in Mathematical Sciences, University of Antananarivo** Antananarivo, Madagascar
Fundamental Mathematics and Physics

EMPLOYMENT HISTORY

- Nov 2018 — Mar 2019 **Project Manager, Société Général Madagascar** Antananarivo, Madagascar
 - Managing projects (technical - organizational - business) defined in the bank's strategy
 - Corrective and evolutionary maintenance of the Core Banking System: managing and resolving anomalies (analyses, recipes, production start-up)
 - Being the correspondent with the intervening parties on the treated projects (service providers, interlocutors in the SG group)
 - Carrying out the implementation of new products or other changes in the core banking systemTraining in Project Management has been offered by the employer and has been completed.
- Feb 2018 — Oct 2018 **Business analyst, AccèsBanque Madagascar** Antananarivo, Madagascar
 - IT project management support: Managing the follow-up of all the bank's digitization project
 - Writing all the necessary documents related to IT projects: business requirements, functional requirements
 - Writing user guide
 - Executing different tests: UAT, FUT
 - Business Optimization: Optimizing all core banking processes using statistical tools
 - Collection and mapping of all actual core banking processes
 - Analysis and Identification of points of improvement for the processes
 - Implementation of the solutions and measurement

- Giving tutorials to first year engineering students in mathematical courses
- Assisting the main lecturer during exams and marking processes

SKILLS	Ability to Work Under Pressure	Experienced	MS Office	Skillful
	Ability to Multitask	Experienced	Matlab	Skillful
	Adaptability	Experienced	C++	Skillful
	Fast Learner	Experienced	Python	Experienced
	Ability to Work in a Team	Skillful	OpenFOAM	Experienced
	Ability to Work Independently	Skillful	Windows, Linux, Mac OS	Experienced
	Communication Skills	Skillful	Converge Software	Beginner
	Computer Skills	Skillful	Blender, GridPro, MeshLab	Beginner

LANGUAGES	English	Highly proficient	Italian	Working knowledge
	French	Highly proficient	Malagasy	Native speaker

EXTRA-CURRICULAR ACTIVITIES

Aug 2017 — Present	Permanent Member, Ikala STEM	Madagascar
	Association with Malagasy members from all over the world aiming to empower and promote young girls and women in STEM.	
	Past responsibility: Maintenance of web site	
	Actual responsibilities: Communication Officer for Europe Chapter and member of the fund raising committee	

PUBLICATIONS

- Ningegowda, B. M., [Rahantamialisoa, F.](#), Zembi, J., Pandal, A., Im, H. G., & Battistoni, M. (2020). Large Eddy Simulations of Supercritical and Transcritical Jet Flows Using Real Fluid Thermophysical Properties. *SAE International: Warren Dale, PA, USA*.
- Pandal, A., [Rahantamialisoa, F.](#), Ningegowda, B. M., & Battistoni, M. (2020). An Enhanced Σ -Y Spray Atomization Model Accounting for Diffusion due to Drift-Flux Velocities. *SAE Technical Paper*, 2(2020-01-0832).
- Ningegowda, B. M., [Rahantamialisoa, F. N. Z.](#), Pandal, A., Jasak, H., Im, H. G., & Battistoni, M. (2020). Numerical Modeling of Transcritical and Supercritical Fuel Injections Using a Multi-Component Two-Phase Flow Model. *Energies*, 13(21), 5676
- Pandal, A., [Rahantamialisoa, F.](#), Ningegowda, B. M., & Battistoni, M. (2020). An Enhanced Σ -Y Spray Atomization Model Accounting for Diffusion Due to Drift-Flux Velocities. *SAE International Journal of Advances and Current Practices in Mobility*, 2(2020-01-0832), 2681-2690.
- [F. Rahantamialisoa, F. N.](#), Pandal, A., Ningegowda, B. M., Zembi, J., Sahranavardfard, N., Jasak, H., ... & Battistoni, M. (2021, August). Assessment of an Open-Source Pressure-Based Real Fluid Model for Transcritical Jet Flows. In *International Conference on Liquid Atomization and Spray Systems (ICLASS)* (Vol. 1, No. 1).
- Zhu, H., Battistoni, M., Ningegowda, B. M., [Rahantamialisoa, F. N. Z.](#), Yue, Z., Wang, H., & Yao, M. (2022). Thermodynamic modeling of trans/supercritical fuel sprays in internal combustion engines based on a generalized cubic equation of state. *Fuel*, 307, 121894.
- Pandal, A., [Rahantamialisoa, F.](#), Sahranavardfard, N., Postrioti, L., & Battistoni, M. (2022). Numerical Simulation of Non-reacting Ducted Fuel Injection by Means of the Diffuse-Interface Σ -Y Atomization Model (No. 2022-01-0491). SAE Technical Paper.

F. Rahantamialiso, F.N.Z, Gopal, J. M., Tretola, G., Battistoni, M. & Vogiatzaki, K. (2022). Single and multicomponent supercritical mixing characterisation using volume-based and mass-based numerical approaches. (To be submitted to IJMF)