

EDUCATION AND TRAINING

1 NOV 2019 – CURRENT – Genoa, Italy
PHD IN MARINE SCIENCE AND TECHNOLOGY – University of Genoa

Currently enrolled in the final year of my research doctorate in Sciences and Technologies of the Sea, Curriculum of engineering for Marine and Coastal Environments (35 cycle) at the University of Genoa (DICC). At the moment I am mainly focused on writing my thesis titled “Climatology of Extreme Weather Events and their Predictability Nature Across Italy”. In this thesis, the focus is three-fold:

1. To investigate the climatology of severe weather events that hit Italy from 1990-2021.
2. To investigate the predictability nature of heavy rainfall events over the North-west part of Italy using the Weather Research and Forecasting (WRF) model.
3. To produce accurate forecasts of wind speed for Wind Energy applications using *Machine Learning (ML)* techniques in combination with *Numerical Weather Prediction (NWP)* models. The second paper on “*Ensemble Machine Learning greatly improves ERA5 skills for wind energy applications*” in the list of publications in this CV refers to this research activity.

Supervisor: Professor Andrea Mazzino

Address Department of Civil, Chemical and Environmental Engineering, (DICC) Via Montalegno 1, Genoa, Italy |

Website <https://dicca.unige.it/> | Field of study Marine Science and Technology |

Thesis Climatology of Extreme Weather Events and their Predictability Nature Across Italy

SEP 2016 – JUN 2018 – Nanjing, China

MASTER OF SCIENCE (MSc) IN METEOROLOGY – Nanjing University of Information Science and Technology (NUIST)

Address No. 219 Ninglu Road, Jiangsu Province, Nanjing, China | Website <https://gxy.nuist.edu.cn/main.htm> |

Field of study Meteorology

SEP 2012 – DEC 2013 – Nairobi, Kenya

POSTGRADUATE DIPLOMA (PGD) IN METEOROLOGY – University of Nairobi

Address P.O.Box 30197, Nairobi, Kenya | Website <https://www.uonbi.ac.ke/> | Field of study Meteorology

SEP 2007 – NOV 2010 – Dar es Salaam, Tanzania

BACHELOR OF SCIENCE WITH EDUCATION (BSC.ED) – University of Dar es Salaam

Address P.O.Box 35091, Dar es Salaam, Tanzania | Website <https://www.udsm.ac.tz/> |

Field of study Physics, Mathematics and Education

WORK EXPERIENCE

AUG 2014 – CURRENT – Dar es Salaam, Tanzania

METEOROLOGIST, NUMERICAL WEATHER PREDICTION (NWP) SECTION – TANZANIA METEOROLOGICAL AUTHORITY

- Complies/Installations, running, and maintenance of Dynamical Numerical Weather Prediction (NWP) Models, namely Weather Research Forecasting (WRF), COSMO, and WAVEWATCH III models.
- Forecasting General Weather for the General Public and the Media.
- Coordinate, Generate, and Evaluate Weather and Seasonal Climate Outlook Forecasts and Verification.

Address P.O.Box 3056, +255, Dar es Salaam, Tanzania | Email met@meteo.go.tz |

Website <https://www.meteo.go.tz/>

SEP 2013 – AUG 2014 – Dar es Salaam, Tanzania

METEOROLOGIST – TANZANIA METEOROLOGICAL AUTHORITY

- Coordinating and organizing training issues for the office.

Department Training Office | Address P.O.Box 3056, +255, Dar es Salaam, Tanzania | Email met@meteo.go.tz |

Website <https://www.meteo.go.tz/>

JUL 2012 – SEP 2013 – Dar es Salaam, Tanzania

METEOROLOGIST TRAINEE – TANZANIA METEOROLOGICAL AUTHORITY

Attended various sections including Observatory, Aviation Forecasting, Communication Desk, General Weather Forecasting Desk, Climate, Agro-Meteorological, and Hydrological sections that aimed at familiarizing the tasks of the office.

- Assist in performing Meteorological, Agro-Meteorological, Hydrological, and Environmental data analyses under the guidance of Senior Meteorologists.

- Assist in Forecasting General Weather for the General Public, Aviation, Agriculture, Tourism, Energy, Disasters, etc.

- Assist in Conducting Climatological data processing

Address P.O.Box 3056, +255, Dar es Salaam, Tanzania | Email met@meteo.go.tz |

Website <https://www.meteo.go.tz/>

AUG 2010 – JUN 2012

TEACHER (SELF-EMPLOYED)

- Teaching Ordinary and Advanced Level Education Physics and Mathematics (Conducting private classes)

Business or Sector Education | Address +255, Dar es Salaam, Tanzania

LANGUAGE SKILLS

Mother tongue(s): **SWAHILI**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	C1	C1	C1
ITALIAN	A1	A2	A1	A1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills

- Fluency in both oral and written English as media of instructions used at School and official Language used at my workplace (Tanzania Meteorological Agency)
- Strong interpersonal skills acquired in my educational carriers and life experiences

ORGANISATIONAL SKILLS

Organisational skills

- Worked at the Training office of Tanzania Meteorological Authority, and was responsible for coordinating and organizing training issues of the Agency
- Skills in Management of Education and School Administration, Communications, Counselling, and Special Needs Education, as parts of the courses acquired during my Bachelor's degree carrier.

DIGITAL SKILLS

My Digital Skills

Programming Languages: R, Python | Visualization and Displaying Tools: NCL and GrADS | Data Manipulation and Processing Tools: Climate Data Operator (CDO), NetCDF Operator (NCO), eCodes | Proficient with Unix/Linux and Microsoft Windows Operating Systems

JOB-RELATED SKILLS

Job-related skills

- 07 to 12 December 2015, APEC Climate Center, Busan, South Korea: Awarded a certificate for participation in the training program on the "Generation of Regional Climate Data Derived from Statistical Downscaling Techniques"
- 06 to 11 July 2015, APEC Climate Center, Busan, South Korea: Awarded a certificate for participation in the training program on the "Regional Prediction using Dynamical Downscaling Schemes"
- 23 to 27 March 2015, School of Meteorology of the Deutscher Wetterdienst in Langen, Germany: Awarded a certificate for participation in the "COSMO/CLM/ART training course based on the non-hydrostatic regional COSMO-Model"
- 17 February 2015, WIMEA-ICT e-learning: Awarded a certificate for participation in the "Weather Research Forecasting (WRF) training course for Africa"
- November 2014, Tanzania Meteorological Agency: Awarded a certificate for participation in the "Aeronautical Meteorological training Course" run for one month.
- 16 to 20 September 2014, Kibaha-Pwani, Tanzania: Awarded a certificate for participation in the training workshop for "Weather Forecasters and Agrometeorologists on the use of Numerical Weather Prediction (NWP) and Satellite Products for improvement of Weather Forecasters"
- 18 to 20 August 2014, Mwanza, Tanzania: Awarded a certificate for participation in the "Mobile Weather Alert training workshop on the User Response for Improving Meteorological Services Delivery to Farmers, Fishers, and Transporters over the Lake Victoria Basin"

HONOURS AND AWARDS

Honours and awards

- 22 to 26 January 2018, Nanjing University of Information Science and Technology (NIJST), China: Awarded a certificate of appreciation for serving as a tutor in a one-week training course on the Weather and Research Forecasting (WRF) Model held during the winter holiday of the academic year 2017-2018.
- 09 October - 07 December 2017, Nanjing University of Information Science and Technology (NIJST), in China: Awarded a certificate of appreciation for serving as a tutor in Linux, CDO, GrADS, and R-programming training.
- 01 March 2017, Nanjing University of Information Science and Technology (NIJST), in China: Awarded a certificate of appreciation for serving as a tutor in a one-week training course of the Weather and Research Forecasting (WRF) Model held during the Winter holiday of the academic year 2016-2017.

PUBLICATIONS

The added value of high-resolution downscaling of the ECMWF-EP5 for extreme precipitation forecasting

<https://doi.org/10.1016/j.atmosres.2022.106458> - 2022

P.E. Tuju, F. Ferrari, G. Casciaro, A. Mazzino. The added value of high-resolution downscaling of the ECMWF-EP5 for extreme precipitation forecasting.

Ensemble Machine Learning greatly improves ERA5 skills for wind energy applications

2022

Mattia Cavaola, Peter Enos Tuju, Francesco Ferrari, Gabriele Casciaro, Andrea Mazzino. Ensemble Machine Learning greatly improves ERA5 skills for wind energy applications.
Under Review at Energy.

Climatology of Severe Convective Storms across Italy in a Climate change Realm

2022

Peter Enos Tuju, Francesco Ferrari, Thomas M. E. Schreiner, Giovanni Besio, and Andrea Mazzino. Climatology of Severe Convective Storms across Italy in a Climate change Realm.
Under Review at Journal of Climatology.

On rotor-stator emulsification within the turbulent inertial subrange: A novel correlation for the droplet size

2022

R. Campardelli, G. De Negri Atanasio, E. Nabil Ahmed, M.A. Corrales González, P.E. Tuju, Jiasen Wei, A. Mazzino, J.O. Pralits. On rotor-stator emulsification within the turbulent inertial subrange: A novel correlation for the droplet size.
Under Review at Chemical Engineering Science.

RANS and LES face to face for forecasting extreme precipitation events in the Liguria region (northwestern Italy).

<https://doi.org/10.1016/j.atmosres.2021.105654> - 2021

Francesco Ferrari, Federico Cassola, Peter Enos Tuju, and Andrea Mazzino. RANS and LES face to face for forecasting extreme precipitation events in the Liguria region (northwestern Italy). Atmospheric Research, 259:105654, September 2021.

Impact of model resolution and initial/boundary conditions in forecasting flood-causing precipitations

<https://doi.org/10.3390/atmos11060592> - 2020

Francesco Ferrari, Federico Cassola, Peter Enos Tuju, Alessandro Stocchino, Paolo Broetto, and Andrea Mazzino. Impact of model resolution and initial/boundary conditions in forecasting flood-causing precipitations. Atmosphere, 11(6):592, June 2020.