europass

Cagri Alperen Inan

Nationality: Turkish **Date of birth:** 13 Nov 1992 **Gender:** Male

Email address: cagri.inan@cmcc.it

Work: c/o Polo Neurobiotech dell'IRCSS NEUROMED via Thomas Alva Edison s.n.c. 81100 Caserta, 81100 Caserta (Italy)

WORK EXPERIENCE

Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici - CMCC – Caserta, Italy

Business or sector: Professional, scientific and technical activities

Post-doctoral researcher

[5 May 2025 – Current]

He currently works or have worked as researcher for the Research Division "Soil and Water Systems" within the Institute for Climate Resilience in CMCC foundation in the projects:
i) AQUA – Enhancing Water Management for Climate Change Resilience in Adriatic-Ionian area
ii)THE HUT – The Human-Tech Nexus. Building a Safe Haven to cope with Climate Extremes projects
iii) National Centerfor HPC, Big Data, and Quantum Computing - HPC" - CUP C83C22000560007 as part of Spoke 4 Earth & Climate
with following areas of expertise
- Hydrological and hydrogeological modelling
- Combining different modelling suites for climate change impact analysis
- Hydrological forecasting with machine learning models for Mediterranean hydro-systems

Università degli Studi di Napoli Parthenope-Dipartimento Di Ingegneria – Naples, Italy

Business or sector: Professional, scientific and technical activities

Post-doctoral researcher

[1 Dec 2023 – 28 Feb 2025]

He worked as researcher for PRIN 2020 project "Floods in cities: new insights for integrating pluvial flooding into flood risk management plans (INSPIRING)" with the following areas of expertise:
- 2D hydrodynamic modelling
- Finite difference, finite element, finite volume methods in numerical modelling
- Fluvial and pluvial flood modelling

L'Institut Terre et Environnement de Strasbourg (ITES) (UMR7063) - CNRS – Strasbourg, France

Business or sector: Professional, scientific and technical activities

Post-doctoral researcher

[1 Jul 2023 – 30 Nov 2023]

He worked as researcher for the project Management of industrial Treated wastewater ReUse as mitigation measures to water Scarcity in climaTe change context in two Mediterranean regions (TRUST) funded by The PRIMA programme which is supported by Horizon 2020, the Framework European Union's Programme for Research and Innovation with the following areas of expertise:
- Hydrological modelling
- Hydrogeological modelling

IMT Mines Alès – Alès, France

Doctoral researcher / Research engineer

[1 Sep 2019 – 31 Aug 2022]

- Developing machine learning-based flash flood forecasting models
- Hydrological modeling

EDUCATION AND TRAINING

PhD

IMT Mines Alès - France [1 Sep 2019 – 18 Jan 2023]

City: Alès | **Country:** France | **Website:** https://www.imt-mines-ales.fr/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Earth sciences | **Level in EQF:** EQF level 8 | **NQF Level:** 8 | **Thesis:** Artifical neural networks flood forecasting: Investigation of the contributions of data assimilation for applications to Cevennes rivers

This thesis is supervised by Prof.Dr Anne Johannet - IMT Mines Alès and Prof.Dr. Bedri Kurtulus - Mugla Sitki Kocamn University.
The thesis develops artificial neural network flash flood forecasting models in a data assimilation framework and proposing innovative hydrological digital twins by using multilayer perceptrons (feed-forward and recurrent) and different process-based hydrological modeling tools.

Master's degree

Université de Poitiers [1 Sep 2016 – 24 Oct 2017]

City: Poitiers | **Country:** France | **Website:** https://www.univ-poitiers.fr/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Earth sciences | **Final grade:** 12.4/20 | **Level in EQF:** EQF level 7 | **NQF Level:** 7 | **Type of credits:** ECTS | **Number of credits:** 120 | **Thesis:** Rainfall - runoff prediction based on artificial neural network, a case study in la Chartreux spring, France

This thesis is supervised by Prof. Dr. Moumtaz Razack
The thesis proposes a case study appliation of artificial neural networks for rainfall - runoff relationship model for a karst aquifer spring, following a master program about hydrogeology and associated transfers, tracer analysis in rivers and porous media.

Bachelor's degree

Middle East Technical University [1 Sep 2010 – 30 Jan 2016]

City: Ankara | **Country:** Türkiye | **Website:** https://www.metu.edu.tr/ | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Earth sciences | **Final grade:** 76/100 | **Level in EQF:** EQF level 6 | **Type of credits:** ECTS | **Number of credits:** 141 | **Thesis:** Decalsinization of geothermal power plant production wells in southwestern Türkiye

- Geological mapping and investigation
- Principles of hydrogeology
- Geochemistry and thermodynamics
- Geophyscis
- Gheothermal energy

LANGUAGE SKILLS

Mother tongue(s): Turkish

Other language(s):

English	French
LISTENING C2 **READING** C2 **WRITING** C1	**LISTENING** C1 **READING** C1 **WRITING** C1
SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1	**SPOKEN PRODUCTION** C1 **SPOKEN INTERACTION** C1

Italian

LISTENING B2 **READING** B2 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B1

German

LISTENING A1 **READING** A1 **WRITING** A1

SPOKEN PRODUCTION A1 **SPOKEN INTERACTION** A1

Arabic

LISTENING A1 **READING** A1 **WRITING** A1

SPOKEN PRODUCTION A1 **SPOKEN INTERACTION** A1

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

SKILLS

Microsoft Office / Python / Linux - Ubuntu / ArcGIS / R / Microsoft Excel / QGIS / Machine Learning / Google Earth Engine / HPC

Statistical learning (Machine Learning)

principles of artificial intelligence / artificial neural networks / deep learning

Earth science

hydrology / Flood forecasting / Hydrogeology / geographic information systems / climate change impact / Hydrology and Water Resources Management software and models / hydraulics / geology

PUBLICATIONS

[2025]

Interpolation and Machine Learning Methods for Sub-Hourly Missing Rainfall Data Imputation in a Data-Scarce Environment: One-and Two-Step Approaches

Authors: Mohamed Boukdire , Çağrı Alperen İnan , Giada Varra , Renata Della Morte, and Luca Cozzolino | **Journal Name**: Hydrology | **Volume, Issue and Pages**: 12(11) | **Publisher**: MDPI

Boukdire, M., İnan, Ç. A., Varra, G., Della Morte, R., & Cozzolino, L., 2025, Interpolation and Machine Learning Methods for Sub-Hourly Missing Rainfall Data Imputation in a Data-Scarce Environment: One-and Two-Step Approaches Hydrology, 12(11), 297

[2025]

Assessment of direct rainfall and flood-induced damage to land transport infrastructure using two-dimensional HEC-RAS 6.6 rain-on-grid simulations

Authors: Giada Varra, Çağrı Alperen İnan, Renata Della Morte, Mario Tartaglia, Andrea Fiduccia, Alessandra Zammuto, Ivan Agostino, Luca Cozzolino | **Journal Name**: Natural Hazards | **Volume, Issue and Pages**: 121, 17615–17645 | **Publisher**: Springer Nature

Varra, G., İnan, Ç.A., Della Morte, R. et al., 2025, Assessment of direct rainfall and flood-induced damage to land transport infrastructure using two-dimensional HEC-RAS 6.6 rain-on-grid simulations,Nat Hazards, 121, 17615–17645

[2024]

Sinkhole Risk-Based Sensor Placement for Leakage Localization in Water Distribution Networks with a Data-Driven Approach

Authors: Gabriele Medio , Giada Varra , Çağrı Alperen İnan , Luca Cozzolino, Renata Della Morte | **Journal Name**: Sustainability | **Volume, Issue and Pages**: 16(12), 5246 | **Publisher**: MDPI

Medio, G., Varra, G., İnan, Ç. A., Cozzolino, L., & Della Morte, R., 2024, Sinkhole Risk-Based Sensor Placement for Leakage Localization in Water Distribution Networks with a Data-Driven Approach, Sustainability, 16(12), 5246.

[2024]

Multi-Station Hydrological Modelling to Assess Groundwater Recharge of a Vast Semi-Arid Basin Considering the Problem of Lack of Data: A Case Study in Seybouse Basin, Algeria

Authors: Cagri Alperen Inan , Ammar Maoui , Yann Lucas, Joëlle Duplay | **Journal Name**: Water | **Volume, Issue and Pages**: 16(1), 160 | **Publisher**: MDPI

Inan, C. A., Maoui, A., Lucas, Y., & Duplay, J. (2024). Multi-Station Hydrological Modelling to Assess Groundwater Recharge of a Vast Semi-Arid Basin Considering the Problem of Lack of Data: A Case Study in Seybouse Basin, Algeria. Water, 16(1), 160.

[2023]

Calculation and Mapping of Some Drought Indices of the Seybouse Maritime Basin (Northeastern Algeria)

Authors: Ammar Maoui, Yann Lucas, Joëlle Duplay & Cagri Alperen Inan | **Journal Name**: MedGU 2023 | **Volume, Issue and Pages**: 2023, 177-181 | **Publisher**: Springer Nature

Maoui, A., Lucas, Y., Duplay, J., Inan, C.A., 2025, Dynamic Evolution of Atmospheric, Ecological, and Hydrological Systems in Circum-Mediterranean Regions, MedGU 2023, 177-181

[2021]

A Hydrological Digital Twin by Artificial Neural Networks for Flood Simulation in Gardon de Sainte-Croix Basin, France

Authors: Cagri Inan Alperen, Guillaume Artigue, Bedri Kurtulus, Séverin Pistre and Anne Johannet | **Journal Name**: 7th World Multidisciplinary Earth Sciences Symposium (WMESS 2021) | **Volume, Issue and Pages**: 906, 1, p. 012112 | **Publisher**: IOP Publishing

Inan, C. A., Artigue, G., Kurtulus, B., Pistre, S., & Johannet, A. 2021, A hydrological digital twin by artificial neural networks for flood simulation in Gardon de Sainte-Croix Basin, France, IOP Conf. Ser.: Earth Environ. Sci., 906, 1, p. 012112

[2021]

Land subsidence assessment under excessive groundwater pumping using ESA Sentinel-1 satellite data: a case study of Konya Basin, Turkey

Authors: Hande Mahide Yeşilmaden, Çağrı Alperen İnan, Bedri Kurtuluş, Mustafa Can Canoğlu, Özgür Avşar, Moumtaz Razack | **Journal Name**: Environmental Earth Sciences | **Volume, Issue and Pages**: 80(11), 409 | **Publisher**: Springer Nature

Yeşilmaden, H.M., İnan, Ç.A., Kurtuluş, B. et al., 2021,Land subsidence assessment under excessive groundwater pumping using ESA Sentinel-1 satellite data: a case study of Konya Basin, Turkey. Environ Earth Sci 80, 409

Le informazioni contenute nel presente Curriculum sono rese sotto la personale responsabilità del sottoscritto ai sensi degli artt. 46 e 47 del D.P.R. n. 445/2000, consapevole della responsabilità penale prevista dall'art. 76 del medesimo D.P.R. per le ipotesi di falsità in atti e dichiarazioni mendaci. Il sottoscritto esprime il proprio consenso, affinché i dati personali forniti possano essere trattati, nel rispetto del Regolamento (UE) 2016/679 (GDPR) come recepito dal D.Lgs n. 101/2018

Naples, 26 Mar 2026

Cagri Alperen Inan