

Jan (Yan) Kazil, PhD

**Applied Scientist –
Weather, Climate,
Atmosphere**

Portfolio

Tech Skills

Projects and Experience

Jan Kazil

Atmospheric scientist with over 15 years experience in data analysis, modeling, software development, and operational work.

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<https://jankazil.com> | <https://github.com/jankazil>

Python (NumPy, Pandas/GeoPandas, Xarray), ML/AI Applications (TensorFlow, Keras, Mask R-CNN), Jupyter, IDL, Fortran, OpenMP, MPI, AWS, Git, netCDF, Bash, Csh, Linux High-Performance Computing, Large Dataset Analysis, Modeling

High-Performance Computing

Built and deployed OpenMP- and MPI-parallelized software to process and analyze large datasets from atmospheric, weather prediction, and climate simulations.

Dataset Analysis

Designed and deployed Python applications for the analysis and visualization of large atmospheric datasets.

Climate Simulation Downscaling

Developed a high-resolution downscaling approach for climate simulations to assess how climate change interacts with cloud processes, using high-performance computing systems.

Atmospheric Simulations

Conducted simulations with high-resolution models, numerical weather prediction models, and climate models on Linux high-performance computing systems.

Atmospheric Model Development

Developed and deployed numerical process representations (cloud microphysics, aerosol processes, air chemistry) for high-resolution (large-eddy), numerical weather prediction, and climate models. Developed high-resolution downscaling for climate simulations.

Neural Network Model Emulation

Created a neural network emulator for an atmospheric radiative transfer model to improve host model efficiency.

Machine Learning & Image Analysis

Trained and applied a deep learning model for instance segmentation of satellite imagery using both synthetic and real data

to enable automated quantitative analysis.

Automated Data Extraction & Analysis with Python

Built and deployed a Python-based system to extract, process, and analyze satellite and NWP data from Amazon Web Services (AWS) in near-real time. This delivered critical data for forecasting and decision-making, supporting the success of the NOAA/NASA 2023 AEROMMA Marine field campaign.

Meteorological Forecast Team Lead

Led the 24-hour weather forecast effort for the 2023 AEROMMA Marine aircraft campaign, supporting flight operations and coordinating target sampling strategy.

Mission Guidance and Coordination

Served as Flight Scientist on NOAA's P-3 aircraft during the 2020 ATOMIC campaign, guiding aircraft operations based on real-time meteorological assessment and scientific goals.

Grants

Secured \$1.3M in research funding as lead investigator.

Professional History

University of Colorado, Cooperative Institute for Research in Environmental Sciences (CIRES), Boulder, CO, USA

05/2024 – 03/2025 - Senior Research Scientist

University of Colorado/CIRES project lead "Clouds, Aerosol, and Climate". International research project lead.

05/2015 – 04/2024 - Research Scientist III

12/2008 – 04/2015 - Research Scientist II

Max Planck Institute for Meteorology, Hamburg, Germany

08/2007 – 11/2008 - Research Scientist

University of Colorado, (CIRES), Boulder, CO, USA

03/2007 – 07/2007 - Research Scientist I

Education

PhD, Atmospheric Science

University of Bern, Physics Institute, Bern, Switzerland

MSc, Theoretical Physics

University of Bern, Institute of Theoretical Physics, Bern, Switzerland

Honors and Awards

University of Colorado/CIRES Bronze Medal for 'Scientific achievement in the design and implementation of the ATOMIC field campaign' (2023).

Elected member of the American Meteorological Society's Committee on Cloud Physics (2019-2025).