# Randy J. Chase, Ph.D.

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## Research Experience

Global Cloud Retrieval Scientist (Research Scientist I) Feb. 2023 – Present
Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University

- Develop machine learning algorithms (diffusion models) for satellite retrievals of clouds

Postdoctoral Research Associate, University of Oklahoma | Norman, OK Jan. 2021 – Feb. 2023
NSF AI Institute for Research on Trustworthy AI in Weather, Climate and Coastal Oceanography (AI2ES)
Adviser: Dr. Amy McGovern

- Develop machine learning algorithms (unets) for severe weather hazards

Graduate Research Assistant, University of Illinois Urbana – Champaign | Urbana, IL May 2018 – Jan. 2021
Department of Atmospheric Sciences
Advisers: Dr. Stephen Nesbitt & Dr. Greg McFarquhar

- Designed and evaluated radar retrievals (neural network) of snowfall for the Global Precipitation Measurement mission

## Education

Ph.D. Atmospheric Sciences May 2018 – Jan. 2021
University of Illinois at Urbana – Champaign | Urbana, IL

M.S. Atmospheric Sciences Aug. 2016 – May 2018
University of Illinois at Urbana – Champaign | Urbana, IL

B.S. Meteorology & B.S. Water Resources Aug. 2012 – May 2016
Minor in Mathematics
State University of New York | Brockport, NY

## Computer Programming

Python: xarray, pandas, matplotlib, numpy, tensorflow (CPU & GPU), pytorch (CPU & GPU), scikit-learn, netCDF4, h5py & beautiful soup

High performance computing: bash scripting (Unix & Linux)

## Relevant First Author Publications

**Chase, R. J**., McGovern A., Homeyer, C., Marinescu, P. and Potvin, C. 2024: Machine Learning Estimation of Maximum Vertical Velocity from Radar. *AIES, **3**, 230095.* https://doi.org/10.1175/AIES-D-23-0095.1

**Chase, R. J.,** Harrison, D. R., Lackmann G. and McGovern A. 2023: A Machine Learning Tutorial for Operational Meteorology, Part II: Neural Networks and Deep Learning. *WAF, **38**, 1271–1293.* https://doi.org/10.1175/WAF-D-22-0187.1

**Chase, R. J.**, Harrison, D. R., Burke, A., Lackmann G. and McGovern A. 2022: A Machine Learning Tutorial for Operational Meteorology, Part I: Traditional Machine Learning. *WAF,* 37, 1509-1529. https://doi.org/10.1175/WAF-D-22-0070.1

**Chase, R. J.,** Nesbitt, S. W. and McFarquhar, G. M. 2021: A dual-frequency radar retrieval of two parameters of the snowfall particle size distribution using a neural network. *JAMC,* 60, 341 – 359. https://doi.org/10.1175/JAMC-D-20-0177.1

## Professional Involvement

Associate Editor | American Meteorological Society – AIES Journal Sep. 2021 – Present

- Conduct timely peer review of journals submitted to new artificial intelligence journal

Unlearning Racism in Geoscience, University of Oklahoma Pod Member | Norman, OK Jan. 2021 – May 2021

- Discussed literature and actionable steps in removing racism against minorities and increase retention in Geosciences

## Honors and Awards

AMS AIES/WAF Editor's Award 2023
American Geophysical Union Technical Committee Student Award Fall 2020
NASA Earth and Space Science Graduate Fellowship Fall 2017, 2018 & 2019

## Professional Resources

Github: https://github.com/dopplerchase
Google Scholar: https://scholar.google.com/citations?user=65CXtA4AAAAJ&hl=en
WebofScience: https://www.webofscience.com/wos/author/record/574217
Website: dopplerchase.github.io
Twitter: https://twitter.com/DopplerChase
Full CV: https://dopplerchase.github.io/assets/docs/RandyChase_CV_long.pdf