Andrew Coleman

Results-Driven Atmospheric Scientist

Dallas, NC 28034 / +1 770 503 4316 / andrewc31@icloud.com

Professional summary

Accomplished Atmospheric Scientist and Meteorological Software Developer with 6+ years of experience in weather forecasting and an additional 4+ years in data science and software development. I have consistently demonstrated prowess in leveraging cutting-edge Numerical Weather Prediction (NWP) models, intricately melding them with an advanced understanding of atmospheric dynamics and synoptic meteorology. Specializing in both academic and industry-focused research, I excel in architecting and deploying advanced algorithms and tools for high-throughput data analytics, specifically geared toward large, gridded meteorological datasets.

Employment history

Operational Meteorologist , TruWeather Solutions

AUG, 2022 - PRESENT,REMOTE

· Conducted informative daily shift change briefings to analyze and interpret current synoptic and mesoscale conditions to ensure our team was always on top of the latest weather patterns.
· Produced and delivered compelling daily forecasts to our clients using cutting-edge numerical weather prediction, enabling them to make informed decisions and stay ahead of the competition.

· Provided round-the-clock real-time decision support to clients, ensuring their operations were never impacted by unexpected weather events.
· Generated and distributed timely alerts to clients, allowing them to take proactive measures to mitigate risks during severe weather conditions.

· Utilized Python to create dynamic and visually compelling tools that brought current weather observations to life, enabling our team to analyze and interpret data with ease.
· Utilized the TruFlite V360 alerting system to its fullest potential by rigorously examining for bugs and implementing necessary improvements to ensure it functioned optimally.

· Revolutionized testing and bug identification within the TruFlite V360 ecosystem ten-fold by utilizing multi-page bug reports and comprehensive documentation.
· Created a user-friendly NWS advisories & warnings web app for our operations team using JavaScript, HTML, and CSS, enhancing their efficiency and productivity.

· Built multiple powerful utilities for the Gibson Ridge software suite using Python, making it even more useful for our team and clients.
· Independently designed and implemented a Google Cloud-based verification project, enhancing understanding of the strengths and weaknesses of internal weather models.

· Devised a daily automated system using Python to analyze error metrics of weather models, revealing critical insights and informing strategies to better manage known biases and errors.
· Successfully managed the verification project from start to finish, highlighting strong problem-solving abilities and the capacity to work autonomously.

Skills

Scientific Research

Weather Forecasting

Verbal/Written Communication

Linux/UNIX

Machine Learning/Artificial Intelligence

Physics-Based Deep Learning Methods

Gridded Meteorological Data

Geospatial Information Technology (GIS)

GRIB1/2, NetCDF, All text formats

Python, R, JavaScript, HTML, MATLAB

Gibson Ridge Software

Radarscope

Panoply

Integrated Data Viewer (IDV)

Microsoft Suite

Google Suite

Google Cloud Suite

Numerical Methods/Earth System Modeling

Data Analytics/Science/Processing/Visualization

Employment history

Intern Research Meteorologist, Aeolus Capital Management

JUN, 2021 - MAR, 2022,REMOTE

· Wrote 30+ python scripts to analyze 25 years of hurricane model error metrics from the Automated Tropical Cyclone Forecasting Tracks Dataset
Cyclone Forecasting Tracks Dataset
· Conducted a significant scientific literature review of over 50+ papers for artificially intelligent hurricane track clustering and counterfactual insured loss modeling for natural disasters

· Began development of a Real-Time artificially intelligent Hurricane Track Clustering Algorithm
· Constructed a Graphical User Interface to process, parse, and output over 600 gigabytes of gridded text files in under 10 minutes for any NCEP reanalysis field at any user-specified time-step, variable, or pressure/sigma level
· Programmed professional-grade maps and analysis tools for varying meteorological model output to aid in forecasting and analysis
· Crafted an executive summary of the 2021 IPCC Sixth Assessment Report (AR6) for clients

Research Intern, North Carolina Institute for Climate Studies

JUN, 2020 - AUG, 2020,ASHEVILLE, NC

· Developed 25+ scripts to automate parsing of text files and synthesize United States drought severity

· Used code in R Studio to manipulate, clean up, and analyze files containing on average 2 million+ datums
· Presented statistically significant findings and figures to research advisor

· Collaborated with research advisor weekly to brainstorm innovative and novel methods to better synthesize drought data
· Programmatically constructed statistically relevant figures for use in publication and analysis/testing of research hypothesis

---

Education

Masters of Science, Applied Meteorology, Mississippi State University

JUL, 2022 - PRESENT,REMOTE

Bachelors of Science, Atmospheric Science, University of North Carolina Asheville

AUG, 2018 - MAY, 2021,ASHEVILLE, NC

- Awarded excellence in research in my senior year of undergrad due to the depth of and success of the research. This research went on to be published in Weather and Forecasting.
- Awarded research scholar distinction due to successfully publishing in our universities academic journal.

Associates of Science, Geography, The University of North Georgia

AUG, 2016 - MAY, 2018,OAKWOOD, GA

- Awarded geography student of the year in 2018 upon receiving my A.S in geography.