Daniel Rothenberg

(502) 648-7513 ✆
766 S Martin St   daniel@danielrothenberg.com ✉
Apt B-105   @danrothenberg 🐦
Longmont, CO 80501   danielrothenberg.com ⌂

Meteorologist | Climate Scientist | Pythonista

SUMMARY OF QUALIFICATIONS

Leader and innovator in the atmospheric sciences, employing novel analytical, modeling, "big data", and machine learning techniques and pioneering "atmospheric data science" to tackle cutting-edge research questions in weather and climate with over 10 years of experience collaborating with stakeholders in all sectors of the Weather Enterprise; frequent communicator of climate change science and policy as well as weather risk management.

EXPERIENCE

ClimaCell, *Chief Scientist and Director of Meteorology*   2017-Present
- Oversaw research and development of novel nowcasting algorithms and assimilation/downscaling products using high-resolution numerical models, and proprietary atmospheric observations
- Designed and led a team of research meteorologists, software engineers and data scientists to produce high-performance, cloud-based infrastructure to operationally run nowcasting, assimilation, and forecasting systems
- Leveraged open source technologies (Pangeo stack) to develop a tera-scale weather/climate data archive and access/analysis tools to power climate data science and machine learning applications
- Developed, led and executed a comprehensive R&D roadmap tightly integrated with company business development strategy and opportunities

Massachusetts Institute of Technology, *Postdoctoral Research Associate*   2016-2017
- Conducted inter-disciplinary research projects investigating air quality and climate change using large ensembles of coupled climate/atmospheric chemistry modeling systems (IGSM / CAM-Chem / GEOS-Chem)
- Designed Python-based open source data analysis toolkit for Harvard/GEOS-Chem modeling community

Massachusetts Institute of Technology, *Ph.D., Atmospheric Science*   2011-2016
- As an NSF Graduate Research Fellow, developed and integrated novel machine learning tools for parameterizing aerosol-cloud interactions in global models; participated in ice nucleation measurement field campaigns
- Created Python-based "big data" software tools for working with global model inter-comparison archives on distributed and HPC computing systems
- *Awards*: Outstanding Student Presentation Award (AMS); Postdoctoral Fellowship at Geophysical Fluid Dynamics Laboratory (*declined*)

Google / Ravenbrook Software, *Contract Developer, Google Summer of Code*   2011
- Ported, modernized, and open sourced a high-performance surface analysis algorithm; presented work at invited seminar at the National Climatic Data Center and the AMS Annual Meeting

Cornell University, *B.S.* magna cum laude*, Honors in Research, Atmospheric Science*   2007-2010
- Conducted research on role of volcanoes in the climate system using earth system models
- *Awards*: Charney Prize (MIT); Academic Excellence Award (Cornell/CALS); Father James B. Macelwane Award in Meteorology (AMS; awarded to top undergraduate research paper)

TECHNICAL SKILLS / SPECIALIZATION

Scientific Research (orcid.org/0000-0002-8270-4831): 16 refereed articles (5 first author)
Data Analysis (github.com/darothen) – Python (expert), Spark/dask/MPI, Matlab, R
Numerical Modeling – NumPy/Cython/Numba, Julia, Fortran, C/C++/Cuda, NWP/GCM development
HPC and cloud (GCP / AWS) computing | Open Source Software | Science/Innovation Policy and Outreach

SERVICE

American Meteorological Society (AMS) – Annual Meeting Oversight Committee – Member	2016-Present
Pangeo-data – co-Founder	2016
AMS – Environmental Information Processing Technologies Committee – Member	2018-Present
MIT Science Policy Initiative – Executive Committee Member	2012-2016