brandon taylor

brandontaylor42@gmail.com 918-440-1714

Atmospheric Scientist and AWS Certified Solutions Architect

education

ms | atmospheric science
york university | toronto, on | 2018

- research: polarimetric weather radar
- advisor: peter taylor
- collaborators: george isaac

bs | meteorology & math
university of oklahoma | norman, ok

- class of 2015

coursework

atmospheric science (graduate)
cloud physics
radar meteorology
atmospheric dynamics
climate dynamics
turbulence and diffusion

meteorology (undergraduate)
atmospheric dynamics
mesoscale meteorology
synoptic meteorology
thermodynamics
meteorological measurements
earth system
radiation

math
partial differential equations
physical math
statistics
linear algebra
multivariate calculus
discrete mathematics
differential equations

computer science
intro to java
intro to c
python for meteorology

aws certified
Solutions Architect
Associate

experience

dtn | technical lead/meteorological software engineer
may 2020 - present

- Technical lead for a high-performance GIS web application, which serves maps of Quantitative Precipitation Estimates (QPE), Quantitative Precipitation Forecasts (QPF), and Annual Exceedance Probabilities (AEP).
- Using Continuous Integration/Continuous Deployment (CI/CD) tools to rapidly deploy containerized solutions to AWS Elastic Kubernetes Service (EKS), using TerraForm and CloudFormation Infrastructure as Code (IaC) templates.
- Cross-team leader and collaborator across diverse teams including Remote Sensing and DevOps, using Agile methodologies.

noaa profiler network (npn) | software engineer ii
june 2018 - may 2020

- Engineered data quality verification workflows for comparing radar vertical wind profiles to profiles generated from data assimilation for NWP.
- Developing web applications to visualize and monitor results on a real-time basis.

york university | graduate research asssistant
january 2017 - may 2018

- Analyzing large radar datasets from the King City, Ontario polarimetric research radar, comparing against the NEXRAD network.
- Using Python to objectively analyze radar data, converting spherical data to cartesian. Creating figures of the results using Py-ART, NumPy and matplotlib.

nws wsr-88d radar operations center | software engineer i
june 2015 - december 2016

- Maintaining and developing the code base for the NEXRAD RPG (Radar Product Generator) in C.
- Developed the Data Quality Dashboard, a web application which tracks the quality of differential reflectivity across the NEXRAD fleet.

cooperative institute for mesoscale meteorology | student research associate
august 2014 – may 2015

- Developing Level-II post-processing code in MATLAB to track the quality of NEXRAD Dual-Pol measurements.
- Testing novel ways of using radial-by-radial noise estimates for radar quality-control.

koki fox 23 | meteorologist intern
summer 2013

- Creating forecast graphics in WSI, managing the FOX23 weather website.
- Providing input to the chief Meteorologist for prime-time 7-day forecasts

teaching

yorku | lab instructor
aug 2017 - may 2018

- PHYS 1800/1801: Introduction to Physics for Engineering Lab
- Lab demonstrator for a class of 30+ students

skills

languages
English • Spanish • German

frameworks/tools
Docker • Anaconda • Gitlab CI/CD • ESRI ArcGIS • REST APIs • Git • Flask • JuypterHub/Notebooks • DataDog

programming languages
expert
Python3 • JavaScript • Swift • PostgreSQL/PostGIS

advanced
C • C++ • FORTRAN77/90 • Bash • CSS • LaTeX• TCL

cloud services
Kubernetes (AWS EKS) • AWS CloudFormation • • Micro-Services (AWS Lambda) • Event-Driven Cloud Architecture (AWS SNS+SQS) • AWS S3

passion project

RouteWx - iOS app for planning car trips using numerical weather prediction data
https://twitter.com/routewx

funding awards

AWS Activate awarded $1,000 in cloud credits for my project, RouteWx (2021)

The Weather Network Virtual Observation Engine Improvement (2017-18)

Natural Sciences and Engineering Research Council of Canada Fellowship (2017-18)

journal papers/conference proceedings

[1] I. Holleman, A. Huuskonen, and **B. M. Taylor**. Solar Monitoring of the NEXRAD WSR-88D Network using Operational Scan Data. *Journal of Atmospheric and Oceanic Technology*, 2022. URL: https://journals.ametsoc.org/view/journals/atot/39/2/JTECH-D-20-0204.1.xml, doi:10.1175/JTECH-D-20-0204.1.

[2] **B. M. Taylor**, K. Ward, T. Parzybok, E. D. Mitchell, and T. Mai. HydroMetPortal: A Web-based Visualization Tool for Novel Hydrometeorological Analytics, Insights and Alerting. 722, Virtual, 2021. Amer. Meteor. Soc., *AMS 101st Annual Meeting*. URL: https://youtu.be/I5IA9MesyHU.

[3] **B. M. Taylor**. Direct Comparisons of Polarimetric C-Band and S-Band Moments in Snow. 6.19, page 253, Wageningen, NL, 2018. Wageningen University & Research, *10th ERAD*. URL: https://doi.org/10.18174/454537.

[4] **B. M. Taylor**. Direct Comparisons of Polarimetric C-Band and S-Band Moments in Snow. Master's thesis, York University, 2018. URL: http://hdl.handle.net/10315/35034.

[5] **B. M. Taylor**. Validation of a C-Band Snowfall Water Equivalent Algorithm with S-Band Radar over Lake Ontario. S105, Austin, TX, 2018. Amer. Meteor. Soc., *98th Annual Meeting*. URL: https://ams.confex.com/ams/98Annual/webprogram/Paper338595.html.

[6] **B. M. Taylor**, D. Sills, G. Isaac, and P. A. Taylor. A Case Study on the Enhancement of a Snow Squall by a Meso-Low. 06 2017. URL: https://doi.org/10.13140/RG.2.2.30845.87524.

[7] **B. M. Taylor**, J. C. Krause, R. L. Ice, W. D. Zittel, and A. E. Daniel. Sunspike Detection using Radial-by-Radial Noise Estimates. 241, Norman, OK, 2015. Amer. Meteor. Soc., *37th Conf. on Radar Meteorology*. URL: https://ams.confex.com/ams/37RADAR/webprogram/Paper275514.html.

outside activities

- Active contributor on open source software projects such as Py-ART.
- Lived outside of the United States for 2+ years. 7 Months in Germany and 1.5 Years in Canada
- Oklahoma Weather Lab Forecasting Shift Leader for 3 years
- Keynote Speaker for Arvest Bank Friday Financial Forum in Bartlesville, OK
- Volunteer for Meals on Wheels deliveries in Norman, OK and Dry Bones Denver, a non-profit whose mission is job placement for unhoused teens.