brandon taylor

brandon.taylor@dtn.com
wxd00d
918-440-1714
routewx.com/bio

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

experience

dtn | meteorological software engineer
may 2020 - present

- Lead architect for a CONUS-wide high-performance GIS web application (HydroMetPortal), which serves tiled raster images of Quantitative Precip Estimates (QPE), Quantitative Precip Forecasts (QPF), and Annual Exceedance Probability (AEP).
- Using Atlassian Continuous Integration/ Continuous Deployment tools to rapidly deliver containerized solutions to AWS, using CloudFormation templates.
- Database administrator for the Teton Precip DB (PostgresQL), which contains various QC'd rain gauge data going back to the 19th century.

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

- Creating data quality verification methods by comparing NPN radar wind profiles to HRRR model profiles, and developing a web application to automate this process and visualize the results.
- Migrating NPN software from commercial-off-the-shelf software (COTS) to free-open-source-software (FOSS), and recompiling software designed for Windows onto a 64-bit Linux OS.

york university | graduate research asssistant
january 2017 - may 2018

- Carrying out meteorological research on large radar datasets from the King City, Ontario polarimetric research radar, by combining various sources of data.
- Using Python to perform coordinate transformations on radar data, 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 and FORTRAN.
- Developing 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 sunspike analysis code in MATLAB for tracking NEXRAD antenna performance characteristics.
- Testing novel ways of using Radial-by-Radial noise detection.

koki fox 23 | meteorologist intern
summer 2013

- Creating WSI graphics, managing the FOX23 Weather website, and running a custom WRF model based on the NWS Tulsa version.
- Radar control during severe weather events

teaching

yorku | student 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
Anaconda • AWS CloudFormation • Atlassian CI/CD • ESRI ArcGIS • REST APIs • Git • Flask • JuypterHub/Notebooks • NumPy • Matplotlib

programming languages
expert
Python3 • JavaScript

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

familiar
Swift 5 • PostgreSQL • Java

computing paradigms
Virtual Machines • Containerized (AWS ECS and Kubernetes) • Serverless (AWS Lambda) • Event-Driven Architecture • Infrastructure-as-a-Service (IaaS)

projects (non-research)

RouteWx - Hazardous weather tracking in Google Maps

Github Repository for RouteWx

funding awards

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

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

papers / posters

[1] 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*.

[2] 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*.

[3] B. M. Taylor. Direct Comparisons of Polarimetric C-Band and S-Band Moments in Snow. Master's thesis, York University, 2018.

[4] 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*.

[5] 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.

[6] 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*.

awards

Travel Support Award - 10th European Conf. on Radar in Metr. and Hydr.	2018
Cash Bonus - Centuria Corporation	2016
Scholarship - Thomas J. Lockhart Scholarship in Metr. Measurements	2015
Scholarship - College of Atmos. and Geo. Sciences Study Abroad Scholar	2014
Nominee - National Society of Collegiate Scholars	2013
University Scholar - University of Oklahoma Honors College	2013

outside activities

- Active contributor to 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