# Nicholas Chandler

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*US Citizen*


## Education

- **Master of Science in Data Science** — Berlin, Germany
  *Berlin University of Applied Sciences (BHT) – GPA: 3.94 American (1.06 German)* — *Oct. 2024 – August. 2026*
- **Bachelor of Science in Computer Science; Minors in Math & Stats** — Bellingham, WA
  *Western Washington University – GPA: 3.96* — *Sept. 2020 – June 2024*
- **Associates of Arts / High School Diploma (Dual Enrollment)** — Seattle, WA
  *North Seattle Community College / Roosevelt High School – GPA: 3.4* — *Sept. 2018 - June 2020*

## Experience

- **Data Science Researcher (Machine Learning & Engineering)** — Berlin, Germany
  *Calgo Lab – Berlin University of Applied Sciences (BHT)* — *Feb. 2025 – August 2026*
  - Engineered distributed experimental pipelines using a Kubernetes cluster to investigate errors in tabular data.
  - Co-developed **tab-err** and implemented CI/CD via GitHub Actions to automate testing and linting.
  - Deployed and maintained dockerized web-demos and LLM applications (with vLLM) on Nvidia GPUs.
  - Assisted with the development of course materials in Jupyter Notebooks.
- **Computer Science Researcher (Deep Learning)** — Bellingham, WA
  *Hutch Research – Western Washington University* — *March 2023 – June 2024*
  - Built a deep learning pipeline using PyTorch and TensorFlow to predict binary star system variables.
  - Optimized data processing of large astronomical datasets using NumPy to reduce training data preparation time.
  - Collaborated with a 4-person engineering team to standardize code quality and reproducible model training.
  - Participated in weekly deep learning reading group covering topics like neural network architectures and reinforcement learning.
- **Mathematics Researcher (Statistical Analysis)** — Bellingham, WA
  *Western Washington University* — *Oct. 2022 – June 2024*
  - Assisted in developing a novel class of two-sample non-parametric statistical tests for data analysis using R.
  - Conducted multi-threaded, parallelized simulation studies in a distributed computing environment and applied proposed tests to real-world reaction-time data, evaluating the statistical properties and practical performance.
  - Presented findings at the 2024 Joint Mathematics Meetings and 2023 SIAM PNW Conference.
- **Mathematics Tutor (Math Fellow)** — Bellingham, WA
  *Western Washington University* — *Sept. 2022 – June 2024*
  - Selected as a Math Fellow due to high performance in undergraduate mathematics courses.
  - Tutored advanced topics including Multivariable Calculus, Linear Algebra, ODEs, Probability, and Statistics.

## Publications

- **Anonymized but Useful Synthetic Tabular Health Data for AI based Fall Risk Assessment** | DOI: 10.1038/s41597-026-07910-z — 2026
  - Assisted in writing code, documentation, and walkthrough notebooks for the Synthius package. Published in Nature Scientific Data.
- **Probabilistic Neural Network Approach to Determining Parameters of Eclipsing Binaries** | DOI: 10.3847/1538-3881/ae5b79 — 2026
  - Worked on prototyping neural network architectures in Python for my Bachelor's thesis. Included working with large astronomical datasets using Astropy. Published in The Astronomical Journal Volume 171, Number 5.
- **MechDetect: Detecting Data-Dependent Errors** | DOI: 10.1109/DSIS67228.2025.11390600 — 2025
  - Architected and experimentally evaluated a novel machine learning framework for characterizing error mechanisms in tabular datasets. Created scientific data visualizations, and published in IEEE Xplore for DSIS 2025.
- **Towards Realistic Error Models for Tabular Data** | DOI: 10.1145/3774914 — 2025
  - Integrated tab-err into a Kubernetes framework distributed with Helm to run experiments for an ACM JDIQ publication. Benchmarked the scalability of the library and the effect of errors on downstream machine learning.

## Master's Thesis

- **Data-Driven Spatiotemporal Modeling in the Geosciences using Machine Learning** | Access Link 2026
  - Developed and evaluated machine learning and Gaussian process approaches for spatiotemporal groundwater-level modeling using historical, geological, environmental, and remote-sensing data.
  - Compared neural forecasting and time-series foundation models, including N-HiTS and Chronos2, and developed coupled and decoupled spatiotemporal approaches.
  - Analyzed model performance across geographic and geological regimes using principal component analysis and spatial evaluation.

## Selected Projects

- **ML Baseball Analytics** | *R, GBDT, SHAP, XAI*
  - Led a team to predict batting averages using gradient boosted decision trees and applied SHAP for interpretation.
- **NumPy Neural Network from Scratch** | *NumPy, Python*
  - Implemented a deep neural network including backpropagation and SGD using only matrix operations.
- **6502 Breadboard Computer (Ben Eater)** | *Assembly, Hardware*
  - Built a hardware clock and 6502-based computer, programming an LED blinker in Assembly.

## Awards / Competitions

- **William Lowell Putnam Mathematical Competition** December 2023
  - Participated in the Putnam Mathematical Competition.
- **Bellingham Bay Marathon** September 2023
  - Completed the Bellingham Bay Marathon and finished in 4:17:04.
- **Arlan Norman Research Award** June 2023
  - Awarded by Professor Kimihiro Noguchi to fund statistics research during the Summer of 2023.
- **International Collegiate Programming Competition 2022** May 2022
  - I was a member of the highest-scoring team at my university (WWU) in the 2022 ICPC competition.

## Presentations

- **Groundwater Spatiotemporal Modeling with Deep Learning and Gaussian Processes** | *DFG ApplFM Summer School* May 2026
  - Presented a poster on work from my master's thesis about modeling groundwater in Brandenburg, Germany.
- **Double Trouble II: Applying Deep Learning to EBS Systems** | *WWU Scholar's Week* May 2024
  - Presented a poster on work for my senior project concerning applying deep learning to astronomical data.
- **Statistical Testing Research** | *PIMUC (2 times), SIAM PNW, Joint Mathematics Meetings* 2023–2024
  - Presented research on a novel class of two-sample statistical tests at four venues, including simulation studies and applications to reaction-time data.