

James Shannon

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<https://shannoj.github.io/Website/>

Skills

Programming: Python (pandas, numpy, scikit-learn, XGBoost, scipy, statsmodels), R, SQL, Java, Git

Tools & Platforms: Streamlit, Jupyter, Linux, Excel, Tableau

ML/Statistics: Time series, regression models, gradient boosting, hypothesis testing, Bayesian Statistics

Mathematics: Linear algebra, numerical analysis, optimization, probability theory, statistical modeling

Education

University of Washington, MS in Applied and Computational Mathematics Sept 2025 – Dec 2026

- **Relevant Courses** CSE 546 Machine Learning, STAT 509 Mathematical Statistics

Western Washington University, BS in Mathematics, Minor in Chemistry Sept 2018 – June 2021

Projects

NFL Player Performance Prediction System | Python, XGBoost, Pandas, SQL

- Engineered predictive model with R^2 of 0.81 for quarterback passing yards
- Implemented bootstrap confidence intervals to quantify prediction uncertainty and model reliability
- Built pipeline integrating multiple data sources (nflreadpy, weather APIs) with pandas for weekly predictions

US Electricity Generation Forecasting | Python, Streamlit, Time Series Analysis

- Built interactive time series forecasting dashboard analyzing 20+ years of EIA electricity generation data
- Implemented Fourier decomposition ($R^2=0.91$), autoregressive lag models ($R^2=0.94$ deseasonalized), and seasonal trend analysis to analyze EIA data
- Created production dashboard with Streamlit enabling real-time exploration of 7 energy sources

Experience

Intermediate Lab Technician, Fred Hutch – Seattle, WA Sept 2024 – Sept 2025

- Processed and analyzed laboratory specimens following SOPs and regulatory standards
- Conducted QA/QC testing to ensure data integrity and accuracy
- Collaborated with cross-functional teams to interpret clinical data results
- Maintained and monitored laboratory inventory supplies and requested new supplies when necessary

EHS Specialist, Fred Hutch – Seattle, WA July 2021 – Sept 2022

- Managed large datasets tracking hazardous materials and improved process efficiency
- Conducted data-driven assessments to support safety audits and regulatory reporting
- Ensured safe disposal of hazardous waste in accordance with state and federal guidelines

Statistical Research Assistant, Western Washington University – Bellingham, WA August 2020 – June 2021

- Analyzed structural changes in datasets using Cumulative Sum and Likelihood Ratio tests.
- Utilized R for statistical modeling, data analysis, and visualization.
- Authored an abstract comparing change point detection methods for statistical conferences.

Research Data Analyst, University of Washington – Seattle, WA June 2019 – August 2019

- Extracted and analyzed medical record data to identify correlations and trends between different autoimmune disorders and chronic neutropenia
- Cleaned and organized large datasets using Excel for accurate reporting.