Richland, Washington, 99352

CHRIS BEAVER

Applied Data Scientist

PROFESSIONAL SUMMARY

I am an applied data scientist with extensive expertise using both R and Python to leverage advanced data science techniques such as statistical modeling, machine learning, and Shiny app deployment for enhancing data-driven decision making and operational efficiency. My passion for creating impactful insights through compelling data visualizations and automated analytical tools has been clearly demonstrated through my peer reviewed published works and my Shiny apps. [Click here]() to view my published works. [Click here]() to view my portfolio which includes some Shiny app examples.

EMPLOYMENT HISTORY

CONTRACT DATA SCIENTIST   **August 2024 - Present**
Upwork   *Remote*

- Develop client-specific data solutions enhancing data-driven decision making and project efficiency
- Automate data analysis through custom Excel function creation and Shiny app deployment to ensure efficient time management and customer satisfaction
- Transform data to perform actionable insights across a diverse range of industry perspectives
- Communicate findings clearly and concisely regardless of model complexity
- Produce comprehensive reports, enabling clients to deliver data-driven recommendations within a given timeline

CONTRACT GRANT MANAGER - DATA VISUALIZATION AND   **April 2024 - August 2024**
INTERPRETATION SPECIALIST
Energy Northwest   *RIchland, WA*

- Facilitated grant proposal awarding by editing and critiquing a proposal to construct several EV fast charging stations east of the Cascade Mountains in Washington State. This project will greatly assist in achieving the state mandate that all vehicles purchased or registered in the state must be EV by 2030.
- Forecasted project cost of the EV charging station grant in an easily communicable and understandable way regardless of the professional focus of the audience through visualizations using the matplotlib and seaborn Python modules.
- Investigated Funding Opportunity Announcements (FOAs) through federal (Office of Energy Efficiency and Renewable Energy) and state (Washington State Department of Commerce) entities and summarized technical aspects of the grants in easily communicable terms.

RESEARCH ASSOCIATE - APPLIED MACHINE LEARNING.   **May 2016 - April 2024**
Washington State University   *Richland, WA*

- Successfully designed and executed a project that utilized unsupervised machine learning to identify the Raman spectra of certain phenolic compounds using Surface Enhanced Raman Spectroscopy (SERS) and supervised machine learning to quantify those compounds once identified. This pioneering work clearly demonstrates that SERS combined with machine learning can be used to model small organic molecules such as phenolics.
- Successfully designed and executed a project for tracking alcoholic fermentation of red and white wines using spontaneous Raman spectroscopy (SRS) and quantitative machine learning algorithms. This methodology greatly simplifies and expedites accurate tracking of fermenting wines by exposing said wines to a non-destructive laser beam and recording their subsequent Raman spectra.
- Successfully designed and executed a project focussed on quickly and accurately predicting the phenolic content of red wine by recording their UV-visible spectra. This work led to the development and deployment of Shiny apps using the Posit's Shiny framework in commercial wineries in Washington State and California. With the apps, anyone can accurately predict the concentration phenolic compounds in their wine regardless of their level of expertise.
- Routinely mentored graduate students, edited graduate theses and manuscripts.
- Handled purchasing and reconciliation.
- Routinely analyzed and visualized data using the R and Python languages.
- Created posters and other media to gain interest in awarded grants and attract certificate students and participate in workshops.
- Wrote and edited manuscripts and submitted them for publication for my own work as well as other projects I was directly involved with.

RESEARCH ASSOCIATE - CHEMICAL ANALYSIS AND   **June 2011 - May 2016**
DATA MODELING
Washington State University   *Prosser, WA*

- Successfully designed and executed a project for predicting mean tannin polymer size in red wines by constructing a model using tannins that were first isolated from raw cacao beans using flash chromatography and preparative High Performance Liquid Chromatography (HPLC). By isolating polymers of specific sizes, this work allows for more accurate prediction of tannin polymer size in red wines which is directly correlated with wine longevity and hence cost.
- Routinely analyzed and visualized data using the R language to fulfill various project requirements.
- Wrote and published manuscripts of my work in accordance with journal format requirements.

EDUCATION

MASTER OF SCIENCE   **Sep 2009 - May 2011**
Washington State University   *Pullman, WA*

My studies primarily focussed on analytical chemistry, statistical modeling, and sensory analysis of phenolic compounds commonly found in red wine cultivars.

BACHELOR OF ARTS   **Sep 2000 - May 2004**
Westminster College   *New Willmington, PA*

Areas of study included music, philosophy, and world religions which included a one month internship as a Buddhist monk at the Fo Guang Shan Monastery in Kaohsiung, Taiwan

CERTIFIED IN BUSINESS ANALYSTICS WITH TABLEAU   **May 2024 - September 2024**
Pathstream through Coursera Plus   *Remote*

This certificate course provided a well rounded overview of data analytics from a business perspective and how to create compelling visualizations, dashboards, and stories for valuable data-driven insights using Tableau.

CERTIFIED ADVANCED DATA ANALYST,   **November 2023 - April 2024**
DATA ANALYST CERTIFICATE PROGRAM BY GOOGLE
Coursera Plus   *Remote*

Building from the first data analyst certificate offered by Google, this certificate focussed on performing data analysis using Python within a Jupyter notebook, manipulating larger scale datasets using SQL within BigQuery, and performing statistical analysis and machine learning within the statsmodels and scikit-learn Python modules..

MACHINE LEARNING A-Z CERTIFICATE   **June 2023 - September 2023**
Udemy   *Remote*

This certificate comprehensively covered a broad range of machine learning algorithms and applications using both R and Python. Each algorithm covered in the training included a general introduction to mathematical theory, sample data, a detailed walkthrough of how to analyze the example data in both R and Python, and bonus activities.

CERTIFIED IN POSTGRESQL   **February 2023 - May 2023**
University of Michigan through Coursera Plus   *Remote*

To gain a better understanding of Structured Query Language (SQL), I took this training in PostgreSQL provided by the University of Michigan. Although this certificate focussed primarily on PostgreSQL, I've found that the fundamental concepts it covered are applicable across several SQL dialects.

CERTIFIED DATA ANALYST,   **September 2022 - January 2023**
DATA ANALYST CERTIFICATE PROGRAM BY GOOGLE
Coursera Plus   *Remote*

The primary focus of this certificate was to provide a thorough overview of data collection and cleaning using the R tidyverse package suite, data visualization using the R ggplot2 package suite as well as Tableau, and data reporting.

SKILLS

Data collection, data manipulation, Data transformation, Data analysis, Data reporting, Data modeling, machine learning, R, Python, Jupyter notebooks, Shiny, Microsoft Office suite, Google Drive suite, PostgreSQL, BigQuery, Proposal writing, Data visualization, Statistical modeling, Analytical chemistry

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LANGUAGES

English (*Native*), Spanish, Swahili

LINKS

Portfolio: chris-beaver.com Google Scholar: scholar.google.com LinkedIn: www.linkedIn.com

AWARDS AND ACHIEVEMENTS

- Published manuscripts in peer reviewed journals
- One month collaboration with Environmental and Molecular Sciences Laboratory at PNNL - 2022
- Ongoing collaboration with commercial wineries across Washington State, California, and Australia utilizing Shiny app for predictive modeling
- Provided hierarchical clustering heat maps for a publication which received paper of the year (2013) from the American Society of Enology and Viticulture

REFERENCES

Federico Casassa - California Polytechnic University (*lcasassa@calpoly.edu*, *(805) 756-2751*)
Matthew Boenzli - Chandler Reach Winery (*matthew.boenzli@gmail.com*, *(541) 971-3018*)
Layton Ashmore - Washington State University (*phillip.ashmore@wsu.edu*, *(919) 308-3516*)