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| **COLTON ROBBINS**  **Data Analyst**  Seattle, WA | [Coltonrobbins73@gmail.com](mailto:Coltonrobbins73@gmail.com)  +1 206-552-4365  [www.linkedin.com/in/colton-robbins73](http://www.linkedin.com/in/colton-robbins73) |

**WORK EXPERIENCE**

**Data Analyst – *Fred Hutch Cancer Research, Seattle, WA*** Mar 2023 – Jan 2024

*Skills:* ***SQL, Python, PostgreSQL, Machine Learning, Multiple Linear Regression, Random Forest, Cloud Computing***

* Saved $80k annually by automating end-to-end single-cell analysis pipeline using the scverse anndata toolkit executed on a 600GB memory high-performance computing cluster.
* Attained a 20% improvement in cell-type classification by implementing deep language models (scBERT transformer) on large-scale biological datasets (500+ million data points).
* Reduced processing time by 95% for RNA expression analysis through Python automation scripts, Slurm job scheduler, and workflow management software on high-performance computing clusters.
* Led 30 weekly meetings and 3 departmental meetings to discuss technical research findings and future directions using Tableau, Looker, and plotly visualizations.
* Achieved 100% completion rate for 5 concurrent projects within a 6-month period.

**Research Data Specialist - *Nanostring Technologies, Seattle WA*** Dec 2021 – Nov 2022

*Skills:* ***SQL, Python (Pandas, Scikit-learn, Plotly), MySQL, Tableau, Decision Trees, Regression, Causal Inference***

* Increased revenue by $200k as a direct result of a 20% increase in sensitivity for CosMx spatial analyzer through protocol optimization using decision tree and regression analysis.
* Achieved 25% reduction in assay failure response time through the development and deployment of a cloud-based SQL database for real-time quality control monitoring and anomaly detection.
* Accelerated time-to-insight by 70% through the development of Python-based automated data analysis pipelines leveraging pandas, scikit-learn, and Tableau visualization.
* Automated analysis of 100+ terabytes of spatial microscopy images to directly quantify improvements to key protocol changes reducing product iteration intervals by 1-week on average; an estimated savings of 100k per year.
* Effectively translated $500k budget for spatial biology prototype to first phase product delivery 6-weeks ahead of schedule while surpassing molecular detection efficiency requirements of 80%.

**Computational Biologist – *Washington State University, Pullman WA*** Sep 2018 – Aug 2021

*Skills:* ***Python (Pandas, Scikit-learn, Matplotlib), R (Bioconducter, Ggplot2, Tidyverse), Regression, Hypothesis Testing***

* Achieved a 20% improvement in cell-type classification on large multi-species multi-temporal single-cell data sets (e.g., 700+ million data points across 3 species across 15 time points).
* Reduced processing time by 40% for immunofluorescent cell counting by authoring automated image analysis software using ImageJ macros, R scripting, and Bioconducter packages.
* Saved ~$2000 quarterly on lab reagents by integrating an online ordering database with direct vendor purchasing.
* Automated analysis on 200 core computing cluster to quickly align genomic sequencing fragments (300 GB memory).
* Trained and mentored 7 lab technicians in advanced laboratory protocols and computational methods.

**EDUCATION**

**M.S in Molecular Biology – *Washington State University, Pullman WA –*** *Honors Distinction –* **GPA 3.96 / 4.00**

*Thesis Research Paper*: [**Multi-Species and Multi-Dimensional Comparison of the Developmental Porcine Testis**](https://rex.libraries.wsu.edu/esploro/outputs/graduate/THE-DEVELOPING-PORCINE-TESTIS-TRANSCRIPTIONAL-ATLAS/99900606854201842?institution=01ALLIANCE_WSU)

*Relevant coursework:* **Bioinformatics (Python, R, Unix), Advanced Genetics (Python, SQL, Unix)**

**B.S. in Biochemistry – *Washington State University, Pullman WA –*** *Magna Cum Laude –* **GPA 3.87 / 4.00**

*Relevant coursework:* **Statistics (Regression), Calculus, Introduction to Bioinformatics (Python, Perl)**

**CERTIFICATIONS**

AWS cloud practitioner - 2024

**PUBLICATIONS**

[**Donor-derived spermatogenesis following stem cell transplantation in sterile NANOS2 knockout males.**](https://www.pnas.org/doi/full/10.1073/pnas.2010102117) (2020) Proceedings of the National Academy of Sciences, 117(39), 24195-24204

[**Proper timing of a quiescence period in precursor Prospermatogonia is required for stem cell pool establishment in the male germline.**](https://journals.biologists.com/dev/article/148/9/dev194571/261737/Proper-timing-of-a-quiescence-period-in-precursor) (2021) Development, 148(9)