# Zach Eliason

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## EDUCATION

**THE GEORGE WASHINGTON UNIVERSITY, School of Medicine and Health Sciences** *May, 2029*
PhD in Integrated Biomedical Sciences, *Genomics & Bioinformatics* Washington, D.C.

**BRIGHAM YOUNG UNIVERSITY, COLLEGE OF LIFE SCIENCES** *Dec. 2023*
B.S. Bioinformatics, Minor in Computer Science, *magna cum laude* Provo, UT
GPA: 3.98/4.0, Major GPA: 4.0/4.0

**Honors:** 2022 Amgen Scholar, Washington University St. Louis
Recipient of 4-year, merit-based, full-tuition university scholarship
College of Life Sciences Dean's List (recognizes students in the top 5% of the college)

**Courses:** **CS:** Deep Learning, Machine Learning, Algorithm Design & Analysis, Data Structures, Discrete Structures
**Biology:** Computational Cancer Biology, Genetics, Molecular Biology, Evolutionary Biology, Chemistry
**Math:** Linear Algebra, Calculus, Methods of Proofs, ANOVA, Biostatistics/Biological Data Science

## EXPERIENCE

**MYRIAD GENETICS** *May 2024—Aug. 2024*
Bioinformatics Intern Salt Lake City, UT

- Spearheaded design and implementation of a FHIR-compliant reporting system, enhancing global EMR interoperability
- Migrated reporting pipeline to AWS serverless architecture (Lambda, DynamoDB, AppSync) to scale with future growth

**PAYNE LAB, BRIGHAM YOUNG UNIVERSITY** *Sep 2023—Dec. 2023*
Bioinformatics Research Assistant Provo, UT

- Conducted simulations to test limitations of experiments in spatial proteomics to advance future biological discovery
- Wrote review on single-cell spatial proteomics furthering awareness of best practices in field

**ZAYT BIOSCIENCE** *May 2023—Aug. 2023*
Bioinformatics Intern Berlin, Germany

- Developed 100+ novel synthetic DNA promoters using custom VAE architecture enhancing gene expression experiments
- Built custom BLAST-guided gene alignment pipeline to facilitate comparative analysis across 100+ species

**ZHANG LAB, WASHINGTON UNIVERSITY IN ST. LOUIS** *Jun. 2022—Aug. 2022*
Bioinformatics Research Assistant St. Louis, MO

- Designed and implemented novel HLA genotyping tool using EM algorithm achieving over 90% accuracy
- Introduced novel LOH detection functionality in HLA genotyping tool, improving clinical cancer diagnosis options

**ABBOTT LAB, BRIGHAM YOUNG UNIVERSITY** *Jan. 2021—Apr. 2022*
Data Manager & Environmental Research Assistant Provo, UT

- Performed quality assurance & control on hydrology time series spanning 3+ years to advance conservation efforts
- Designed and implemented data cleaning and correction tools for large datasets in use by 12+ research assistants

## SKILLS & CERTIFICATIONS

**Programming & Scripting**
- Python, R, C++, Docker, SQL, Unix, Git, pipelining (Snakemake), SQL/NOSQL, web programming

**Omics & Oncology Research**
- BLAST, genome assembly, spatial proteomics, immunology, cancer genetics, FHIR development

**Artificial Intelligence & Machine Learning**
- ***Deep Learning:*** PyTorch, CNN, VAE, transformers
- ***Machine Learning:*** SciKit Learn, random forests, XGBoost, KNN, Bayesian ML

**Statistical Methods**
- Bayesian modeling, causal inference, hypothesis testing