Zach Allen

He/Him

IMPACT & EXPERIENCE

Sofware Engineer *at* Pluton Biosciences *2021-03 - 2021-08*

Data Engineering supporting Bioinformatics Research

- AWS Genomics Pipeline

  Independently designed, implemented, and deployed Terabyte-scale AWS genomics pipeline in 4 months part time, from no prior genomics or AWS experience.

  - Designed, implemented, and documented gRPC+ProtoBuf pipeline architecture.
  - Collaborated with SMEs to gather, interpret, and meet data pipeline requirements. Interfaced with Bioinformatics expert for genomics tool selection.
- Led the CS team in adopting SDLC tools like Git, AWS CodeCommit, and Docker / AWS Elastic Container Registry. Championed utilization of Microsoft Teams Kanban tools for project&process management.
- Worked closely with SMEs to perform analysis and visualization of microbial taxonomy data in R.

Embedded Systems Engineer *at* Applied Separations *2019-01 - 2020-01*

Developed custom C++ / Arduino pump control software

- Designed and developed pump control software for chromatography and analytical chemistry systems in C and C++.
- Designed and validated delivery prediction and smoothing algorithms for nonlinear feedback delay.
- Interfaced with separate development team in charge of chromatography control software. Collected and implemented requirements from instrumentation engineer.

Machine Learning Researcher (Intern) *2017-01 - 2017-05*

at Pacific Northwest National Laboratory

ML Research and Data Engineering

- Designed and tested novel Neural Network algorithms, architectures, and error formulations for NLP, image classification, and time-series data classification.
- Demonstrated increased test accuracy (15% 90% detection with higher Bayesian Confidence) on unbalanced (>1000:1) datasets, without duplication, augmentation, or batch filtering.

EDUCATION

Bachelor's in Computer Science *2019-02 - 2022-08*

at Western Governors University

Focused on Machine Learning and Project Management in a fully remote environment

SUB-TASKS:

- Diamond Price Prediction Model *link*

  Proposed, implemented, and documented a diamond price prediction ML model

  - Demonstrated integration of project management and software engineering best practices.
  - Developed simple Data Pipeline in python/pandas.
  - Integrated code and report generation with a Jupyter Notebook.

ACHIEVEMENTS:

- Excellence Award for Communication Applications *link*

SUMMARY

Machine Learning Researcher & Data Engineer with 5 years experience in collaborative AI innovation & infrastructure implementation at scale. Expert in Python & TensorFlow since 2015/2017. Passionate about working closely with multidisciplinary partners to shape the future towards global sustainability. Excellent writing, speaking, presenting, and technical communication skills.

CONTACT

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PROJECTS

Neural Cellular Segmentation *link*

Exploring neural cellular automata and attention (NCA+A) for medical image segmentation in TensorFlow

- Developed, tested, and iterated NCA+A models in TensorFlow, balancing system resources and model size.
- Created multiple tf.Data pipelines with preprocessing and data augmentation steps.

Interplan *link*

Task dependency management from a Graph Database