



MATT RALSTON

Bioinformatics Research Scientist

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Philadelphia PA, USA

in matthewralston

MatthewRalston

matthewralston.github.io

STRENGTHS

Statistical Reasoning ML

Software Engineering

Technical Expertise

Programming Python

Pandas Numpy Scipy

AWS matplotlib k8s

PROGRAMMING

Python • R • NodeJS • Emacs
Linux • AWS • Docker
D3.js • Perl • bash • grep/sed
LaTeX • Matlab • Mongo •
PostgreSQL • k8s

LABORATORY

Cell Biology Illumina NGS
library prep • aseptic technique
• Northern & Western blot •
Spectrometry • Microscopy •
qRT-PCR IF • IHC • FACS Human
cell culture • Anaerobic fermentation

Analytical Chemistry GC-MS
• HPLC • FTIR

REFERENCES

Kyle Lambert

in kyle-lambert-9879848b

Mark Russo

in mark-russo-24950a

Cathy Wu

in cathy-wu-87837b6

ABOUT ME

Combines a strong understanding of the physicochemical basis of biological phenomenon with intermediate computer science and data science abilities. Expert in data visualization, database applications, pipeline development, and analytical problem solving.

EXPERIENCE

Genomics Pipeline Developer | Bayer Crop Sciences

06 2020 - 12 2020

St. Louis MO, USA

- Used AWS and AWFL to get to production (24 steps) within 6 months.
- Learned new methodologies: biosynthetic gene discovery, phylogenetics, completeness, and other functional genomics annotations.

Research Scientist II | Bristol Myers Squibb

05 2015 - 05 2019

Lawrenceville NJ, USA

- LevTech Innovation award for a dataset version control system git-lfs clone (Comp. Bio)
- Expanded a multi-platform theoretical chemistry framework to enumerate all protomers, tautomers, and rotamers/conformers (2D->3D enumeration) (CADD)
- Parameter optimization and scalability investigation of the framework across multiple chemotypes, SMARTS filters for implausible substructures. (CADD)

EDUCATION

M.Sc. in Bioinformatics and Computational Biology | Univ. of Delaware

08 2012 - 02 2015

Newark DE, USA

B.Sc. in Biochemistry (2012)

- GPA: 3.97

PROJECTS

RNA-Seq pipeline | |

08 2022 - 01 2023

- A 38 component Kubeflow pipeline implemented on k8s
- Deployed for private consulting

Kmerdb | |

10 2019 - 01 2023

- A new file format based on the bgzf spec for genomic investigations.
- Normalization, PCA, t-SNE, distance matrices, Markov probabilities, and more!