MATT RALSTON

Bioinformatics Research Scientist

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in matthewralston   MatthewRalston   🌐 matthewralston.github.io

STRENGTHS

Quantitative modeling
Statistical reasoning   Logic
Technical Expertise

Programming   Python
Pandas   Numpy   Scipy
AWS

PROGRAMMING

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

LABORATORY

Cell Biology   Illumina NGS
library prep • aseptic tech-
nique • Northern & Western
blot • Spectrometry • Mi-
croscopy • qRT-PCR
IF • IHC • FACS Human cell
culture • Anaerobic fermen-
tation

Analytical Chemistry   GC-
MS • HPLC • FTIR

REFERENCES

Kyle Lambert
in kyle-lambert-9879848b

Mark Russo
in mark-russo-24950a

Malcolm Davis
in malcolm-davis-4b37586

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, complete- ness, and other functional genomics annotations.
- Developed parsers, data structures, and scripts in Python.

Research Scientist II | Bristol Myers Squibb

📅 05 2015 – 05 2019   📍 Lawrenceville NJ, USA

- Galaxy bioinformatics server administrator, sequencer automation, AWS (Comp. Bio)
- LevTech Innovation award for a dataset version control system git-lfs clone (Comp. Bio)
- Expanded a multi-platform theoretical chemistry framework to enumerate all pro- tomers, tautomers, and rotamers/conformers (2D->3D enumeration) (CADD)
- Parameter optimization and scalability investigation of the framework across multi- ple 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

- GPA: 3.97

B.Sc. in Biochemistry | Univ. of Delaware

📅 08 2008 – 06 2012   📍 Newark DE, USA

- Minor in Biochemical Engineering

PROJECTS

Kmerdb | ⌨ | 🌐

📅 10 2019 – 01 2021

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