Tim Farrell

Data Engineer/ Manager (Biomedical)

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EXPERIENCE

Day Zero Diagnostics, Boston MA

Manager, Bioinformatics Data Engineering

JUN 2020 - PRESENT

Manage one of the largest and fastest growing genomics + antimicrobial resistance databases in the world. Increased AI/ ML model dataset size 55+% over 1.5 year period. Led successful migration from legacy to cloud-native systems.

Bioinformatics Engineer

MAY 2019 - JUN 2020

Developed/ operated genomics data workflows/ infrastructure for clinical-grade services.

US Army Reserve, Taunton MA — *Operations Officer*

MAY 2012 - MAR 2021

Part-time military leader. Activated for DoD COVID-19 response in spring 2020 (3 mo) and deployed overseas 2016 - 2017 (12 mo). Managed operations of ~100-soldier units.

The Broad Institute, Cambridge MA — *Assoc. Computational Biologist*

MAY 2017 - JUN 2019

Developed tool for accurately genotyping polyclonal malaria infections to analyze 60k+ samples from phase III malaria vaccine clinical trial. Developed scalable, cloud-native genomic pipelines for malaria genomics (parasite and vector).

Boston University, Dept. of Health, Boston MA — *Research Assistant*

AUG 2015 - MAY 2016

Built pre-processing pipeline for fMRI connectivity study of Human Connectome data.

Boston University School of Medicine, Boston MA — *Research Assistant*

DEC 2014 - DEC 2015

Developed data management and analysis system for 24-primate study on metabolism.

EDUCATION

Boston University, Boston MA — *MS, Bioinformatics*

SEPT 2014 - MAY 2016

Software engineering and data science focus.

Rutgers University, New Brunswick NJ — *BS, Biomedical Engineering*

SEPT 2008 - MAY 2012

Bioengineering focus.

SKILLS

Languages: Python, SQL, Javascript, Java, R

Data engineering: Postgres, Prefect/ Airflow, BigQuery, Metabase, MongoDB, GraphQL, streamlit

DevOps: git, docker, conda, CircleCI, Kubernetes, GCP, APIs

Data science: PyData stack (pandas, seaborn, numpy/ scipy, jupyter), scikit-learn

Data types: genomic, clinical, neuroimaging, imaging (cell microscopy), web data, motion capture

Bioinformatics: Nextflow, WDL/ Cromwell, bwa, GATK, Picard, (sam|bed|vcf)tools, biopython

Genomics: WGS, amplicons, (variant|haplotype)-calling, assembly, annotation, kmers

PROJECTS

covid-geno2geo
Geographic classifier for COVID-19 genomes

fullstackopen Course on React, Node.js, MongoDB and GraphQL

data science bowl 2018
Detecting cell nuclei using MASK-RCNN

blood antigenicity prediction
clinical sequencing-based structural variant classifier for Rh antigenicity