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Experience

Omic, Chief Engineer *Feb 2020 - Mar 2021*

- Designed and implemented a novel and distributed AI system to support the treatment of 7,000+ human diseases.
- Guided the application of the system to generate *in silico* small molecules for treatment of a specific cancer type.
- Generated 100M+ molecules with generative attention and convolution networks for selected proteins.
- Invented a new cloud-agnostic and type-aware workflow system in < ½ lines of code as competing systems.
- Architected and merged biological data schemas with type system for integration into multi-million node knowledge graph, built from 30M+ scientific articles and an attention network.
- Co-constructed web platform for collab, building, and analysis of bioinformatics and AI pipelines and outputs.
- Co-developed a mortality prediction pipeline using 40k SARS-CoV-2 genomes with 0.8 AUROC.
- Led a team of 15 genomic and drug-discovery scientists, full-stack engineers, data scientists, and web designers.
- Built proprietary on-premises computing cluster for our AI and bioinformatics engine workloads.
- Performed demos to clients with collective market caps of $350B+.

Omic, Research Scientist *Apr 2019 - Feb 2020*

- Co-developed personalized variant-based genetics pipelines for measurement of drug metabolism capability in addition to personalized health and wellness reports.
- Moved the company to stable test-production environments with rigorous tests on infrastructure and core science.
- Worked on theoretical feasibility of many systems, including: a reference-based genome compression and a knowledge graph-based search engine.
- Constructed state-machine and Alexa-based conversational assistant for our medical practitioner-facing product, Omic MD (precursor to Omic OS).
- Built immunotherapy assessment pipeline for somatic cancer tissue genomes using Tumor Mutation Burden.
- Prototyped patient "cost bloom" prediction, with near-70% accuracy.

Vizinet, Research Engineer *May 2016 - Apr 2019*

- Created a central machine learning platform for in-field air quality analysis of wildfires.
- Led research and development on a research initiative for inferring particulate matter (PM2.5) concentration levels using convolution networks trained on data collected from crowdsourced smartphone images.
- Drafted and implemented entire website and mobile app UX from obscure and generic product requirements.
- Built dynamic Android app interface for submitting image data and observations, adaptable to new air-quality algorithms provided by environmental researchers.
- Designed Android app as client to server backend—submitting posts, authenticating users, recording server algorithm output, and managing local submissions.
- Directed formal pre-production testing with ~15 academic, government, and layperson users.

Microsoft, Software Engineer, Contract *Dec 2017 – Sep 2018*

- Worked within Microsoft Azure, Digital Subject Rights (DSR) team, for processing petabytes of sensitive user data within their primary data stores.
- Owned external-facing service and optimized the processing of privacy commands by up to 10x.
- Moved team to more efficient command data store to reduce external dependencies.
- Developed team's I/O package for efficiently reading and writing 2M+ daily public requests to Azure storage.
- Built internal Azure service for tracking and processing thousands of user-sensitive data streams a second (32x faster than previously achieved) ensuring edge-case data is properly disposed.
- Built APIs used by over 1K Microsoft Service Teams (e.g., Office, Xbox, Windows, Skype) for validating exports and deletes on their sensitive user telemetry.
- Constructed entire team’s test infrastructure and validation service used within our code development life-cycle.
- Coded Cosmos DB scripts for weekly hard-deletes on many terabytes of user telemetry.
- Acted efficiently to resolve high-severity incidents directly with Service Teams, PMs, and senior staff at the onset of GDPR.

Education

B.S. Computer Science, Washington State University May 2017

- Honors: Cum Laude (GPA 3.7/4.0) and President’s Honor Roll (6x).

Awards and Certifications

Deep Reinforcement Learning Nanodegree, Udacity Feb 2019
Flying Car and Autonomous Flight Engineer Nanodegree, Udacity Aug 2018
Deep Learning Specialization, deeplearning.ai Jan 2018