Lucas Glenn Weber

Entrepreneur, programmer

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Personal Statement

I'm interested in making machines that can think, and solving high-impact, real-world problems along the way.

Work Experience

Feb 2020 - Mar 2021

Co-founder and Chief Engineer *Seattle, WA*

Omic, Inc.

- Co-designed and deployed collaborative AI platform to support the treatment of 7,000+ human diseases, using multi-omics data and ML (AlphaFold, DRL, CNNs, GANs, BERT) for small-molecule drug discovery.
- Invented portable workflow engine integrated with UI, serverless backend, and knowledge graph (KG), responsible for processing workloads up to approximately 15 TB/week.
- Constructed 1B+ node KG fed by processed and integrated scientific articles and biological + clinical data—served as central DB for continuous data insertion and knowledge mining.
- Led teams of 12+ specialized biologists, full-stack engineers, data scientists, and web designers on 25+ bioinformatics and AI projects (all executed on our platform).
- Facilitated product demos to clients and partners with collective market cap of over $350B.
- Was instrumental in the ideation and execution of over 200 high-impact scientific and product features.

Apr 2019 - Feb 2020

Research Scientist *Seattle, WA*

Omic, Inc.

- Co-developed pharmacogenomics pipelines + personalized patient health and wellness reports.
- Increased development speed 3x by implementing stable test/production environments.
- Programmed rapid-fire prototypes, including:
    (1) DNA file compression,
    (2) a deep reinforcement learning (DRL) and KG-based search engine, and
    (3) a clinical patient cost-spike prediction deep learning model (~.72 AUROC).
- Designed and built state machine-based conversational assistant for doctor-facing product.
- Built immunotherapy efficacy assessment pipeline for somatic cancer tissue genomes.

Sep 2018 - Apr 2019

Research Engineer *Seattle, WA*

Vizinet

- Developed CNN model to predict Air Quality Index (AQI) to reduce reliance on $10k+ hardware sensors.
- Prototyped webcrawler with ~20K images retrieved of worldwide public and scientific webcams, image galleries, and $PM_{2.5}$ sensors. (Another 30.1K retrieved through audit.)
- Directed pre-production testing with 14 academic, government, and lay users.

- Productionized website and app with dozens of fixes and usability redesigns from user feedback.

Dec 2017 – Sep 2018

Software Engineer, Contract *Redmond, WA*

Microsoft Corp.

- Maintained and contributed to privacy-critical codebases which processed petabytes of data within Azure.
- Top technical contributions:
  - (1) wrote package for processing 2M+ daily data requests,
  - (2) wrote entire team's test infra,
  - (3) wrote scripts for weekly hard-deletes on 2B+ bytes of data,
  - (4) optimized processing of user requests by 10x,
  - (5) built APIs used by over 1K Microsoft Service Teams, and
  - (6) built delete request tracking service to process data 32x faster.
- Resolved high-severity incidents with internal project managers (e.g., from Xbox, Skype) and senior staff.

Jan 2017 – May 2017

Undergraduate Researcher *Pullman, WA*

Washington State University, Department of Electrical Engineering & Computer Science

- Developed conceptual framework and prototype of AI task assignment system for developer teams using SCRUM and Git, learning developer-task fit.
- Worked under advisor Jana Doppa, Ph. D, and co-advisor Venera Arnaoudova, Ph. D, in collaboration with SaaS club at WSU.

May 2016 – Aug 2016

Software Engineer, Intern *Pullman, WA*

Washington State University, Department of Civil & Environmental Engineering

- Co-created scalable computer vision platform in predicting AQI ($PM_{2.5}$), in the study of the relationship between $PM_{2.5}$ (induced by wildfires) and visibility via images.
- Developed Android app for crowdsourcing researchers to submit image, sensor, and observational data.

Jan 2013 – Mar 2013

Software Engineer, Consultant *Ellensburg, WA*

Central Washington University, Central Access

- Developed multi-platform desktop application to help learning-disabled students read 50+ textbooks.
- Utilized PDF2text conversion to simplify display by near ⅔ for dyslexic, ADHD, and far-sighted users.
- Implemented text-to-speech feature for ADHD and blind users.

Jul 2012 - Aug 2012

Software Engineer, Consultant *Ellensburg, WA*

Jim Caputo, Engineering Director @ Google

- Created mobile-first web app on Google App Engine for reporting accurate weather data to recreational Mount Baker visitors.
- Parsed, stored, queried, and ran analysis on 1M+ weather data points (XML) from NOAA with Java Server Pages, MySQL, and GCP.

Education

Aug 2013 – May 2017

B.S. Computer Science *Pullman, WA*

Washington State University

Associations, Awards, and Certifications

Graduate in Deep Reinforcement Learning Nanodegree, *Udacity* *Feb 2019*

Graduate in Flying Car and Autonomous Flight Engineer Nanodegree, *Udacity* *Aug 2018*

Graduate in Deep Learning Specialization, *deeplearning.ai* *Jan 2018*

Finalist at CrimsonCode, *Washington State University* *Mar 2017*

- Facebook fake news classifier using Bayesian classification—achieved 95% testing accuracy.

***Cum Laude* (3.7/4.0 GPA)** in Computer Science, *Washington State University* *May 2017*

Dean's List (6x) at *Washington State University* *Jun 2015 - May 2017*

Finalist at CrimsonCode, *Washington State University* *Mar 2015*

- Chatbot serving natural language queries from web definitions to directions to movie showtimes.

Skills

Deep Learning (Attention Networks/CNNs/GANS/DRL)
Bioinformatics (AlphaFold/NextFlow/WDL)
Mobile App Development (Android)
Embedded Systems (ARM)
Software Architecture
Product Design
Public Speaking
Technical Writing
Automated Driving and Flying Systems

Python (Numpy/TensorFlow/PyTorch/Pandas/Seaborn)
JavaScript (React/Angular/Node/jQuery)
Cloud Computing (AWS/GCP/Azure)
Secondary languages: *Java, C#, C/C++, Julia*
Linux/Unix (Bash/Vim/TMUX)
Databases (MongoDB, MySQL, Neo4J, Grakn)

Interests

Artificial General Intelligence
Automated Robotics
Computational Omics
Computational Neuroscience
Brain-computer Interfaces
Augmented Reality

Languages

English, *Fluent*
German, *Intermediate*
Spanish, *Basic*