Donelson Graham Berger

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Experience

Amazon Robotics, Robotics Advanced Technology **February 2022 – Present**

Software Engineer *Seattle, WA*

- Worked on Amazon's early stage micro-fulfillment automation solution for Amazon Fresh deliveries
- Headed cross team collaboration on feature design, implantation, and integration with legacy backend services
- Utilized Typescript and AWS to create infrastructure as code which hosts our alpha to production code
- Used SNS, Lambda and DyanomDB to develop a low latency (sub 100ms) order tracking and robot orchestration system
- Helped create event simulation software to enable end to end testing before hardware was available, enabling continuous integration across teams

Banks Lab, Department of Anesthesiology **March 2020 – December 2022**

Undergraduate Researcher *Madison, WI*

- Created Markov models of functional magnetic resonance imaging (fMRI) and intracranial electrophysiological (iEEG) time series data
- Acquired functional clusterings, based off network flow of iEEG Markov models using the InfoMap algorithm
- Used Diffusion Map Embedding, a non-linear dimensionality reduction technique, to calculate the similarity between fMRI and iEEG Markov models and how non-random sampling in iEEG data affects its description of the brain
- Engineered a pipeline that handles over 40 patients and 300 GBs of fMRI and iEEG data from prepossessing to a Dash webapp, which visualizes data in real time

Capital One **June 2021 – August 2021**

Software Engineer Intern *McLean, VA*

- Worked in Card Tech-Machine Learning, optimizing the runtime of a gradient boost model, which generates over a billion dollars annually and determines the likelihood that a customer will pay back their credit card debt after six months of delinquency
- Utilized Helm, Docker and Kubernetes to deploy test models for runtime analysis
- Used AWS S3 Buckets, Snowflake and Spark to feed customer data into test models

AtomBeam Technologies **July 2019 – January 2020**

Software Engineer Intern *Moraga, CA*

- Used Python and the Boto3 SDK to develop scripts to automate the testing of the AtomBeam's IP on AWS
- Reviewed core code written in C that is used in the development of AtomBeam's IP
- Performed algorithmic analysis and review on mathematical white-papers

Programming Knowledge

Languages: Python, Java, Typescript, C, Haskell, HTML

Tools: AWS, Git, Docker, Snowflake, Spark, Tailwind CSS, PyTorch, Kubernetes

Publications and Presentations

Submission: Matthew I. Banks, Bryan M. Krause, **D. Graham Berger**, et al.
"Functional geometry of auditory cortical resting state networks derived from intracranial electrophysiology"

Conference Poster: **D. Graham Berger**, et al. "Comparison of functional geometry of cortical networks derived from functional magnetic resonance imaging (fMRI) versus intracranial electroencephalography (iEEG)", SFN 2021

Conference Poster: Matthew I. Banks, Bryan M. Krause, **D. Graham Berger**, et al. "Functional geometry of cortical resting state networks derived from intracranial electrophysiology", SFN 2021

Conference Poster: Declan Campbell, Bryan M. Krause, **D. Graham Berger**, et al. "Graph theoretic measures indexing arousal state transitions during sleep and anesthesia in human subjects", SFN 2021

Education

University of Wisconsin Madison **September 2018 – December 2021**

Bachelor of Science in Computer Science *Madison, WI*

Awards

Hilldale Research Fellowship | ***My proposal*** **April 2021**

IOHK: Plutus Pioneer Program Certification **July 2021**

Eagle Scout Award **May 2016**