

DONELSON GRAHAM BERGER

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Experience

Amazon Robotics, Grocery Automation

February 2022 – Present

Software Engineer

Seattle, WA

- Initial member on Amazon's alpha micro-fulfillment automation solution for Amazon Fresh deliveries
- Achieved 40% reduction in grocery picking expenses by leveraging serverless cloud architecture to create a low latency order tracking and robotic orchestration system which integrates with external services through RESTful APIs
- Unblocked integration testing, by co-developing an event simulation testing service, before hardware availability
- Maintained CI/CD from alpha to production through Typescript and AWS, using infrastructure-as-code methodologies
- Ensured a successful launch by displaying operational metrics in a CloudWatch dashboard so that we could monitor application health

Banks Lab, Department of Anesthesiology

March 2020 – December 2021

Undergraduate Researcher

Madison, WI

- Demonstrated functional equivalence between non-random iEEG sub-samples and their fMRI counterparts using Diffusion Map Embedding, a non-linear dimensionality reduction technique
- Eliminated repetitive hyper-parameter tuning experiments by creating a real-time data processing and visualising application, which processed over 40 patients and 300 GBs of data
- Ensured seamless project transitions with detailed onboarding materials and technical guides

Capital One, Card Teach-Machine Learning

June 2021 – August 2021

Software Engineer Intern

McLean, VA

- Learned Machine Learning Ops, working on a gradient boost machine learning model, which determined the likelihood of credit card debt repayment after six months of delinquency
- Optimized customer data ingest into machine learning models using Snowflake and Spark
- Orchestrated containerized service deployment utilizing Helm, Docker, and Kubernetes

AtomBeam Technologies

July 2019 – January 2020

Software Engineer Intern

Moraga, CA

- Automated performance testing of AtomBeam's compression algorithms through Python and Boto3 SDK on AWS
- Reduced AWS cost by consolidating data storage

Projects

League of Crafters

February 2023 - Present

- Tech lead of a five person team crafting a League of Legends type Minecraft server plugin
- Enabled parallel work streams by designing and implementing a Hexagonal software architecture

End to End Visual Story Generator

January 2023

- Created a text to video story generator by integrating GPT3, Stable Diffusion, and Text-to-Speech | [Demo](#)

Lunar Lander Reinforcement Learning

June 2021

- Implemented Actor-Critic, a reinforcement learning method, to solve LunarLander-v2 environment in OpenAI gym

Publications Presentations, and Awards

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

Hilldale Research Fellowship | [My proposal](#), April 2021

Eagle Scout Award, May 2016

Education

University of Wisconsin Madison

September 2018 – December 2021

Bachelor of Science in Computer Science

Madison, WI

Programming Knowledge

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

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