Alex Shaw

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EDUCATION

Brigham Young University **Provo, UT**
M.S. Computer Science (ML/AI emphasis) *April 2023*
- **GRE: 170/170** Quantitative, **161/170** Verbal

B.S. Applied Mathematics, B.A. German Studies *April 2022*
- **GPA: 3.97/4.00**, Magna Cum Laude, Full-Tuition Academic Scholarship, L. Tom Perry Leadership Scholarship, 5x Dean's List (top 5%)
- *Co-President* of BYU Tech Society (~300 members) and member of ACM Club, SIAM, PE/VC Club, and MCA

WORK EXPERIENCE

Brigham Young University **Provo, UT**
Deep Learning Research Assistant *August 2021-Present*
- Demonstrated mutual information as a viable prompt selection metric by computing next-token accuracy across 8 datasets using 7 language models (including GPT-3), enabling prompt selection *without ground truth labels* (co-author at ACL 2022)
- Discovered technique to emotionally filter large language model output *without fine-tuning or retraining*, but rather by modifying hidden-state activations in transformers, demonstrating emotions as learned linear features (in-progress, first author)
- Co-authored 1 paper, awarded best presenter at BYU student research conference

Google **Los Angeles, CA**
Software Engineer Intern *May 2022-August 2022*
- Conducted statistical analysis in the first two weeks revealing that the planned project would not affect the quarterly OKR as anticipated saving 400+ engineering hours and resulting in assignment to a new top-priority project rarely given to interns
- Built a casual-inference pipeline using C++ and SQL that processes 22TB daily to detect bias in Google Ads A/B tests to ensure product integrity for 765 companies spending $417.1M annually (this project revealed a major bug in the pre-existing pipeline)
- Presented detailed technical design to the Conversion Lift team (14 employees) and in a Lift-wide forum (77 employees) including potential approaches, trade-offs, resource usage, and engineering effort, along with my personal recommended approach

Apple **Austin, TX**
Machine Learning Intern *June 2021-August 2021*
- Created a computer vision pipeline for multi-view object detection and counting leading to a 31% boost in accuracy over single-view
- Accelerated model runtime by 59% by designing a graph clustering algorithm enabling real-time multi-view detection and counting
- Presented at company-wide ML symposium and to 60+ Apple employees/managers

Microsoft **Seattle, WA**
Software Engineer Intern *May 2020-July 2020*
- Developed a tool isolating cluster certificate updates to prevent cluster corruption, increasing reliability for 1600+ companies
- Created 3 APIs to provide all Azure Service Fabric customers with immediate cluster upgrade details, resolving daily customer requests
- Led 2 demos of new software to 30+ employees and presented a design review to 15+ team members

Max-Planck-Institute **Berlin, Germany**
Data Science Intern *May 2019-July 2019*
- Reduced week-long data-analysis processes to a matter of hours by developing a data visualization interface using Bokeh (Python library)
- Created cluster labels for materials data to predict crystal structures using DBSCAN and K-Means
- Presented data visualization to 8 team members and integrated the visuals into 2 existing demos

ADDITIONAL WORK EXPERIENCE & PROJECTS

Resume AI – *Personal Project* – (Sept 2022) – Created a web app using Next.js and GPT-3 Instruct that allows students to generate bullet points for their resumes; generated 136 bullet points for 11 students (try to guess which bullet points are generated on this resume)

Elevation Capital – *Investment Analyst Intern* – (Aug 2021-May 2022) – Conducted due diligence work on 26 tech start-ups including market sizing and competition analysis to determine investment viability

Lyvli – *Co-Founder* – (Dec 2021-May 2022) – Created a web app using React, Django, and Heroku enabling social media influencers to charge for live, one-on-one video calls with their followers ($415 in revenue generated by 5 influencers over 2-week beta-testing period) – lyvli.io

Effortlist – *Co-Founder* – (May 2020-May 2021) – Engineered a platform with React and Django, allowing users to earn commission by selling other's second-hand items (discontinued after onset of COVID-19)

Brigham Young University – *Physics Research Assistant* – (Sept 2018-May 2020) – Identified magnetic properties of new materials using Python; presented research at 4 conferences, co-authored 1 publication, and attended 1 experiment in Vancouver

VOLUNTEER EXPERIENCE

The Church of Jesus Christ of Latter-day Saints **Munich, Germany**
Full-Time Volunteer *August 2015-July 2017*
- Selected by regional president for highest leadership position, leading 20+ trainings to a group of ~250 volunteers
- Worked 80-hour weeks traveling across 5 countries to execute leadership trainings and advise local leaders
- Trained 34 leaders on a one-on-one basis to improve service outreach, effective teaching, and organization culture

SKILLS & INTERESTS

Languages & Frameworks: Python, C++, SQL, Java, C, C#, Solidity, R, HTML, Unix Shell, XML, CSS, JavaScript, Django, React, Vue, PyTorch
General: Machine Learning, Deep Learning, Mobile Development, Web Development, Blockchain Programming, Bilingual: German & English
Personal: Soccer, ice hockey, pickleball, fishing, UI/UX hobbyist, can solve a Rubik's cube in under one minute