Aryan Luthra

1717 Oxford Street,
Berkeley, CA 94709
(510) 993- 2149

✉ aryanluthra@berkeley.edu

in Aryan_Luthra

🌐 Website

Skills

- Python, Java, SQL, C++
- Distributed Data Analytics
- Identity & Access Management
- Machine Learning/Deep Learning
- Neural Networks
- Reinforcement Learning
- Bayesian Inference
- Feature Engineering
- Keras / PyTorch / scikit-learn
- Tensorflow
- Markov Models (MDP, HMM)
- NEAT , OLAP
- Cloud Computing
- Serverless Computing
- Analytical Modelling
- Amazon Web Services
- Mathematical Optimization
- Algorithm Design

Relevant Courses

- Deep Reinforcement Learning
- Bayesian Modelling
- Machine Structures & Computer Architecture
- Quantum Computing
- Principles of AI
- Principles of Machine Learning
- Efficient Algorithms and Intractable Problems
- Principles of Data Science
- Prob Models & RandomProcesses
- Quantum Mechanics
- Designing Information Devices and Systems

Honors

- UC Berkeley Dean's List
- Global Leadership Diploma
- YMCA Peace medal
- Duke of Edinburgh Silver
- OAPT Physics Award
- Varsity swim team- CISSA winner

Volunteer

- Make-A-Wish Canada - Web and App developer

Education

University of California, Berkeley, Berkeley, CA   2017-2021
Bachelor of Engineering (Major: EECS, Minor:Physics & Data Science) | Tech GPA: 3.85/4.0 (Dean's List)

Technical Experience

Microsoft Azure
Intern- Machine Learning + AI   Jun - Aug, 2020
- Developed an automated ML-based Identity Access Management solution for app access on the cloud that helped to reduce man hours spent for Access Management by >90%
- Trained, debugged, tested, and hyper parameter tuned various supervised learning models, including Neural Nets, to identify the best technique for automating group based access to cloud services
- Implemented multiple clustering algorithms, including auto-encoders, to infer underlying groups within a clients organization used for recommending and executing better access management strategies
- Designed & implemented an automated model & pipeline to inform clients when certain apps are no longer in use, not updated to latest security standards, or include unused (and thus hackable) credentials
- Interacted with multiple Azure clients in order to develop and iterate on these features to match customer need and exceed customer expectations

Amazon Robotics
Intern- Data Science   Jun - Aug, 2019
- Designed ML cloud-based tool using serverless architecture in AWS including Lambda, SNS, SQS, and RDS to keep track of bottlenecks in task pipelines thereby reducing man hours by 80% in problem diagnostics
- Developed an OLAP-based budgeting tool backed by a serverless DB to analyze and diagnose out-of-scope expenses in projects and outsourced work, the tool reduced out of scope expenses by up to 40%
- Increased data cleaning efficiency by up to 80% using Combined Random Forest & NLP techniques (Bag-of-words, keyword extraction) to fill in missing data (task categories) based on context from completed fields

Artiste-qb.net | Developing Quantum-ready Systems
Intern- ML/DL   May - Aug, 2018
- Predicted drone-failures hours in advance by developing ML models using error logs.
- 96% accurately estimated human age/gender from photos of subjects by developing CNN-based models.
- Applied machine learning principles to quantum computers to co-develop Q-ML packages.

Research - QuantumPhysics@Berkeley

Quantum Information with Trapped Ions - mentored by Hartmut Haeffner
Undergrad Research Assistant   Aug 2019 - Jun 2020
- Optimized qubit by implementing CNNs using Quantum Information with trapped Ions & their ability to become a scalable quantum processing device.
- Developed an algorithm that is able to have upwards of 99% readout fidelity while keeping the exposure time to a minimum by merging both algorithmic and ML techniques.
- Reduced required exposure time by using supervised learning models and implementing fast, low-level code; without reducing fidelity.

Projects

Deep Q Learning Doom   Mar 2020 - cont
- Implementing a rational agent using Deep Q-Learning to play the original Doom video game.
- Reliably recognizes health-packs to grab, enemies to kill, and explores to reach the level's terminal state using only visual screen buffer information
- Utilizing a Deep Convolutional + Recurrent Neural Network that estimates Q-Values of complex game states.
- Utilizing technologies such as Nvidia CUDA Parallelization, TensorFlow, and PyTorch.

Quantum Computing Tutorials   Mar 2020 - cont
- Using Microsoft's Q# library to explore and explain what it means to 'Code' on a quantum computer.
- Using Q# with inline explanations in comments to recreate some of the major solutions that quantum computing provides, including Quantum Teleportation, Superdense Coding, and Shor's Algorithm