MRIDUL SARKAR

Adaptable Applied Mathematician

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https://mertall.github.io//mertall/

SUMMARY

My research interests include quantum machine learning, quantum algorithms, and quantum information theory. If someone asked me where I would like to be in 20 years, I would tell them out of all possibilities I hope to stay a student. Learning is what I do best and applying what I learn is what I do for fun. Currently I am focusing on development of open source quantum algorithms and researching mathematics behind quantum machine learning.

PASSIONS

Quantum Algorithms

Machine Learning Algorithms

Human Centered Technology

EDUCATION

Mathematics and Scientific Computation B.a.Sc

University of California-Davis

09/2017 - Ongoing

- Education Minor

RESEARCH/PROJECTS

Durr Hoyer Library

06/2020 - Ongoing

https://github.com/mridulsar/qsharp-community.github.io/blob/master/_posts/Durr_Hoyer_Post_1.md

Implementing open source package for Durr Hoyer Algorithm in collaboration with Qsharp community

Quantum Neural Networks

01/2019 - Ongoing

https://github.com/XanaduAI/qml/pull/96

R&D for quantum neural networks

- 10% increase in accuracy in XanaduAI's Pennylane quantum convulotional neural network, committed changes to their public repo

Quantum Protein Folding

06/2020 - Ongoing

R&D for quantum folding algorithm with Quantum Computing at Davis and IBM Q

MNIST Dataset

https://github.com/mridulsar/MNIST-CNN

96% accuracy on MNIST CV data set with deep learning in 5 hour code sprint

WORK EXPERIENCE

Research Assistant

Center for Neuroscience

12/2019 - 04/2020 Davis, CA

https://github.com/mridulsar/PCA

Dr. Rishidev Chaudhuri's research group

- Developed a PCA algorithm to analyze sparse big data from a brain and form interpretations about cognition
- Helped create python front end for MySQL database

Technical Advisor

Space and Satellite Systems

11/2018 - Ongoing Davis, CA

https://github.com/uc-davis-space-and-satellite-systems/efos

Transforming Computer Systems team with agile methodologies while personally focusing on algorithm design, first project was implementing PID.

- Guided by and collaborating with industry professionals at JPL and NASA
- Increase in computational efficiency and implemented plug and play algorithm design as former Computer Systems Lead
- Began as a Software Engineer in November 2019, CS Lead in May 2019, Tech Advisor Jan 2020

Officer

Artificial Intelligence Society @ UC Davis

11/2018 - Ongoing Davis, CA

AI Society is the only organization @ UC Davis that connects students with the black box

- Fostering and developing a community of AI Aficionados at UC Davis with projects and workshops
- Began as a member of the society in November 2018, earned Officer position in August 2019

Mentee

VMware

01/2019 - 09/2019 Remote

https://github.com/mridulsar/QEOT

Transformed typical troubleshooting for cloud services with chat bot model.

- Developed NLP preprocessing models for Linux and Unix systems

SKILLS

Python **Qiskit** **Q#** **Pennylane** **Matlab** **Latex** **Linux** **Unix** **C** **C#** **Git** **Keras**

Pytorch **SciKitLearn** **TensorFlow** **Numpy**

CERTIFICATION

Machine Learning

Stanford University

Quantum Computing

St. Petersburg University

MY LIFE PHILOSOPHY

Comfortable in the uncomfortable. I strive to learn from and help those around me.

TEACHING EXPERIENCE

CalTeach Intern

UC Davis Department of Mathematics

01/2020 - 03/2020

Fostered an engaging and relaxing environment to learn bio calculus

CalTeach Intern

NP3 Charter High School

11/2018 - 01/2019

Led and assisted in calculus and geometry classes of 30.

CalTeach Intern

Marguerite Montgomery Elementary school

09/2018 - 11/2018

Assisted in 3rd grade math classes.

Math Tutor

Mathnasium

01/2019 - 04/2019

FIND ME ONLINE

Github

https://github.com/mertall