

Tyler King

📍 Newbury Park, California ✉ ttk22@cornell.edu ☎ (408) 838-0038 in TylerKing 📌 Tyler King

Education

B.S. in Computer Science , <i>Cornell University</i> Coursework: OOP and Data Structures, Differential Equations, Electromagnetism, Discrete Math, Machine Learning; GPA: 4.10/4.0	08/2021 – present
Dual Enrollment , <i>Moorpark College</i> Coursework: Calc III (M25C), Linear Alg (M31A), Solid/Fluid Mechanics (M20A); GPA: 5.0/5.0	09/2020 – 08/2021
High School Diploma , <i>Newbury Park High School</i>	08/2017 – 06/2021

Relevant Experience

Machine Learning Intern , <i>Institute for Creative Technologies</i> 🔗 <ul style="list-style-type: none">Leveraged various deep learning architectures (CNNs, GNNs, ResNets) to try and make predictions on complex dependent choices.Preprocessed/augmented data and leveraged hyperband for hyperparameter optimization.Gave a poster presentation about complex choices at HCI International conference.	05/2022 – present
Research Intern , <i>McMahon Lab</i> 🔗 <ul style="list-style-type: none">Developed an interruptable implementation for coherent ising machines (CIMs).Helped prepare datasets for implementing vehicle routing problems with time windows (VRPTWs) on CIMs in conjunction with ExxonMobil.	01/2022 – present
Research Intern , <i>Cislunar Explorers</i> 🔗 <ul style="list-style-type: none">Established ground station uplinking/downlinking protocol for PSK31 transmission from FlatSat.Created unit test cases and worked with Unscented Kalman Filters (UKFs) for Optical Navigation.Helped streamline and clean up UKF implementation; built experience working on a large codebase.	08/2021 – 05/2022
Research Assistant , <i>University of Notre Dame</i> 🔗 <ul style="list-style-type: none">Analyzed quantum circuits and processors under Professor Hoffman using IBM's Quantum hardware and Qiskit SDK.Conducted error analysis of different Grover's algorithm implementations on hardware (<i>ibmq_lima</i>) and noisy simulations (<i>qasm_sim</i>).Leveraged MATLAB and Matplotlib to model results and statistically compare error.	06/2021 – 09/2021

Publications

Minimum Path Star Topology Algorithms for Weighted Regions and Obstacles , <i>arXiv</i> 🔗 Novel algorithms for minimum distance computations that generalize Weiszfeld's algorithm to weighted regions and obstacles. Research conducted with Professor Soltys at CSUCI.	09/14/2021
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Projects

Deep Learning with 2-qubit system <ul style="list-style-type: none">Done as a part of iQuHACK. Implemented a game that involved using quantum unitary operations to try and match an initial statevector to a target statevector.Leveraged deep Q reinforcement learning to train a bot to play the game and implemented a versus mode (player vs bot).
Optimized Weighted Region A* Pathfinding Algorithm <ul style="list-style-type: none">Applying A* pathfinding on squares under pre-drawn paths.Observed results that are within 3% of best-case while achieving exponential speedups in time complexity.

Awards

Engineering Dean's List , <i>Cornell University</i>
AT-PAC Math League: Top 3 Nationally , <i>Atlantic-Pacific Math League</i>
SSI: International Environmental Ideathon , <i>Summer STEM Institute</i> <ul style="list-style-type: none">Finalist, project on theoretical optimization of aquaculture using Naive Bayes

Skills

Languages	Tools	Data Analysis/ML	Misc
Java, Python, MATLAB, Julia, R	Eclipse, JUnit Testing, VS Code, Jupyter Notebook, Anaconda, Git/GitHub	Pandas, Numpy, Matplotlib, Seaborn, Sklearn, Pytorch	Networkx, NI Multisim, WSL, Qiskit, Jira, Microsoft Office