Tyler Sinn Jung

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EDUCATION

University of California, Berkeley **August 2023 - May 2027**
Major: *Physics and Data Science,* **Minor:** *Electrical Engineering and Computer Science (EECS)*
Berkeley, CA
GPA: 3.9/4.0
Relevant Coursework: Designing Information Devices and Systems I, Linear Algebra, Differential Equations and Fourier Methods, Experimental Physics (Circuits/Electronics, Optics/Lasers), Honors Mechanics and Relativity, Honors Electromagnetism and Optics, Honors Thermodynamics and Quantum Mechanics, Multivariable and Vector Calculus, Foundations of Data Science, Principles and Techniques of Data Science, Computational Structures, Data Structures

WORK EXPERIENCE

BLCK UNICRN- *Data Science Intern* **May 2024 - August 2024**
- Leveraged market research to enhance BLCK UNICRN's financial models, adjusting growth trajectories to align with a 50-75% start-up market CAGR, and strategically reallocating over $30,000 in capital to high-priority product development
- Utilized Google Maps, Geocoder APIs, and web scraping tools (Python, BeautifulSoup, Selenium, Scrapy, etc.) to collect, analyze, and visualize data for potential partnerships, future locations, and artist communities. Developed models to highlight favorable factors, identify key prospects, and support a data-driven outreach strategy, enhancing BLCK UNICRN's artist network and growth initiatives
- Conducted a market analysis to define TAM, SAM, and SOM for virtual immersive music experiences, aggregating data from financial sources, performing competitive benchmarking and identifying growth drivers, leading to a strategic and detailed financial report
- Optimized BLCK UNICRN's front end web services and applications for improved fan and creator engagement

University at Albany, RNA Institute, Lee Lab- *Research Intern* **June 2022 - December 2022**
- Researched the nematode c. Elegans for RNA transcription and cell-cell signaling pathways, conducted live imaging, data quantifications of RNA transcription active sites, conglomerated data analysis and interpretation
- Conducted wet-lab work, such as specimen maintenance, slides preparation, and gel electrophoresis
- Co-authored a research article, *Aging disrupts spatiotemporal regulation of germline stem cells and niche integrity* (accepted at *Biology Open*)

PROJECTS/PUBLICATIONS

Lily Pad Plunge
- An arcade style game where users maneuver and aim a frog to drop down onto moving pads
- Utilized an Arduino Mega to code game logic (C++) and integrate with mechanical and electrical systems, such as a gantry, pulley, and LCD. Ensured interactive buttons and magnets reflected functional physical input systems and LCD game display
- Developed circuitry system and designed materials dimensions through CAD and eCAD. Utilized both wood and 3D prints
- Supplemented project with a website detailing progress and functionality. Programmed using HTML, CSS, and Javascript (React)

Aging disrupts spatiotemporal regulation of germline stem cells and niche integrity
- Research on age related disruptions on Notch signaling and germline stem cell regulation in the c. Elegans DTC
- Identified a significant decline in c. Elegans germline fecundity beginning in early adulthood due to disruption in Notch signaling regulation and age-related structural and morphological changes in the DTC/niche, linking niche aging to stem cell regulation and germline tissue function
- Created and analyzed data and visualizations on DTC using MATLAB, particularly on active RNA transcription sites. Explored using fluorescent and live imaging microscopes

Elliptical Galaxy Classification through Palomar Observatory Sky Survey Data (POSS)
- Explores and analyzes thousands of galaxies from the Palomar Observatory. Focus on elliptic galaxies and analysis conducted based on elliptic properties.

ORGANIZATIONS

- **Big Data at Berkeley, *Bootcamp Instructor-*** Develops a comprehensive Data Science curriculum for high school students and teaches extensively through pedagogical methods. Course content includes simulations, machine learning, and classifier models
- **Quantum Computing at Berkeley, *Error Corrections Subcommittee-*** Presents and researches quantum error correction methods, analyzes viability of erasure conversion schemes in systems with metastable states of trapped ions; presented to over 100 students, professors, post-docs, and industry professionals. Develops simulations for quantum error correction models
- **Theta Tau Professional Engineering Fraternity-** Engages in professional development, brotherhood, and philanthropy in STEM
- **University of California, Berkeley Symphony Orchestra, *Violinist-*** Frequent concerts, performs works of the standard repertoire

SKILLS/INTERESTS

- **Skills-** Python (and associated libraries), Arduino, HTML/CSS/Javascript, SQL, LaTeX, MATLAB, Microsoft Office, Git/Github, C++, CAD, Violin/Viola (2X NY All-State), Korean, Taekwondo (2nd Dan Black Belt), Haidong Gumdo (1st Dan Black Belt)
- **Interests-** Skiing, Running, Tennis, Soccer, Weightlifting, Finance, Baseball Analytics, Cooking Sushi