

EXPERIENCE

Faster Logic, LLC

Chief Executive Officer · Business Development and Project Management

San Diego, California

July 2021 - Dec. 2021

- **Chief Executive Officer:** After the untimely passing of the company founder and with approval from the Office of Naval Research (ONR) I became the CEO of the company and PI on the active Phase I STTR Option. There were multiple challenges: a DCAA audit, reconciling the accounting system, personnel issues, subcontract administration and determining the company's plan for the upcoming Phase II contract. I oversaw daily operations from submission of contract deliverables, payroll, legal, contract administration, and human resources. Even with all the issues, the company successfully completed the Phase I Option for ONR. Due to personnel issues beyond my control, the decision was made to dissolve the company. During the company shutdown, I assisted the attorney with distribution of dissolution notices, helped the accountant verify W-2 and 1099s, and made sure all taxes were paid. I gained invaluable business experience about running a company, project management, prioritization, and communication.
- **Engineering Support:** Associate Project Engineer from June 2020 - June 2021. Managed various research projects which include benchmarking multiple quantum computing algorithms, utilizing Python Cirq to Verilog implementation for the Phase I contract. Guided the research effort for the algorithm benchmarking and employed statistical methods to improve the robustness of the results. Contributed to SBIR proposals, assisted with the DCAA audit, and worked closely with Dr. Moberly to develop the long term goals of the Phase I contract and map out the needed technologies. Supervised interns and managed their responsibilities for the company, including: interviewing, weekly meetings, and providing support.
- **Web Development:** Computer Science Intern from Aug. 2017 - May 2020. Created a mobile-friendly contact form landing page with interactive elements using JavaScript, HTML, and PHP. Acquired knowledge about Linux, server management, cybersecurity, and programming. Attended networking events from NDIA, AFCEA, SDMAC, PTAC, IEEE, and Score Mentoring. Through these events assisted Dr. Moberly in developing company relationships and exploring new opportunities. Assisted with proposal writing, managing multiple deadlines, and strategic thinking.

CompuMAINE Lab

Senior Leadership Role · Lab Programs

Orono, Maine

June 2018 - Present

- **Xsmurf Coding:** During summer 2021, formed a group to help students code with CompuMAINE Lab's in-house software, Xsmurf. This involved helping students learn about Linux, git, bash, Tcl, and virtual machines. By providing training to all undergraduate members, they can now handle more advanced research projects.
- **Machine Learning:** Founded a machine learning group during summer 2019. Students in the group established a strong understanding of machine learning and had experience with Python. Students also gained collaborative experience working with git (version control).
- **Student and Code Management:** Assisted the Lab Director with moving research code onto GitHub, developed a HR hour tracking system with Google Sheets, and generated social media posts. Currently serve on the thesis committee for a CompuMAINE Lab member.

Lytix, Inc.

Data Analyst · Data Analytics for Clients

San diego, CA

Feb. 2018 - Jun. 2018

- **Excel and Tableau Reports:** This was the most important aspect of the position; clients wanted to see changing trends, relevant statistics, and concise summaries. These reports were biweekly and or monthly with little variation. To generate these reports, Excel Query and Tableau were utilized.
- **Automated data downloads:** I developed a Python script that would download the needed data from Tableau Server which eliminated having to manually access Tableau Server for commonly used datasets.
- **PowerShell and Excel VBA PowerPoint creation:** I wrote VBA macros that conducted the data analysis in Excel and then made graphs which would be copied over into a PowerPoint. Near the end of my position, I linked everything with PowerShell to fully automate the standard report process. A single command in the terminal would download data, execute VBA macros, make a PowerPoint, and send an email with the PowerPoint attached.

PROJECTS

Deep Learning and the Wavelet Transform Modulus Maxima (WTMM) method: My PhD dissertation explores novel methodologies combining deep learning and the WTMM method in cancer detection. One venture is to preprocess the data with the WTMM method and then feed it into a neural network. Another approach is to use a wavelet neural network that is composed of waveons.

Image Saturation: My masters thesis investigated how image saturation affects the resulting statistics from the 2D WTMM method. We developed a rescue method that allows for saturated images to be utilized in multifractal image analysis. The rescue method can remove the impact of saturation on the estimation of the fractal dimension for a monofractal image.

SKILLS

Languages: Python, Verilog, R, VBA, C

Technologies: Pytorch, Linux, git

Other: Eagle Scout, Deans List throughout SDSU, Awarded the 2021 Summer Research Fellowship at UMaine

EDUCATION

University of Maine <i>PhD in Electrical and Computer Engineering; GPA 4.0</i>	Orono, Maine <i>Expected Graduation May 2024</i>
University of Maine <i>M.A. in Mathematics; GPA 3.67</i>	Orono, Maine <i>Graduation May 2020</i>
San Diego State University <i>Majors: Economics and Interdisciplinary Studies (Valedictorian); Honors GPA 3.91</i>	San Diego, California <i>Graduation Aug. 2017</i>

CONFERENCE PROCEEDINGS AND ABSTRACTS

1. De, R, Moberly, R, Beery, C, **Juybari, J** and Sundqvist, K 2021. *Multi-Qubit Size-Hopping Deutsch-Jozsa Algorithm with Qubit Reordering for Secure Quantum Key Distribution*. 2021 IEEE International Conference on Quantum Computing and Engineering (QCE). pp. 473-474
2. Brewer, P, Moberly, R, **Juybari, J** 2021. *A comparison of zero and minimal intelligence agendas in Markov Chain voting models*. OSF Preprints.
3. Greenlee, A, **Juybari, J**, Tilbury, K, Khalil, A 2021. *Multiscale Image Colocalization: Generalizing Pearsons Correlation Coefficient*. Maine Biological and Medical Sciences Symposium.
4. Greenlee, A, **Juybari, J**, Tilbury, K, Khalil, A 2021. *Multiscale Image Colocalization*. UMaine Student Symposium.
5. Sundqvist, K, Grubb, I, McBrian, K, De, Rohit, **Juybari, J**, Moberly, R 2020. *Exploring Analog Emulation of Quantum Computation Using Quadrature Modulation*. The Fourteenth International Conference on Quantum, Nano/Bio, and Micro Technologies.
Best Paper(s) Award
6. **Juybari, J** 2020. *A Method to Reclaim Multifractal Statistics from Saturated Images*. Electronic Theses and Dissertations. 3176.
7. Harling, M, **Juybari, J**, Johnson, C, Townsend, K, Khalil, A and Tilbury, K 2020. *Wavelet-based characterization of the spatial relationship of nerve and collagen in neuropathic adipose tissue*. Proc. SPIE 11245, Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXVII, 112450R.
8. **Juybari, J** 2019. *The Effects of Image Saturation on Multifractal Statistics*. UMaine Student Symposium.
9. **Juybari, J** 2017. *Time Scale Profile of Risk in Foreign Exchange Markets*. San Diego State University Student Research Symposium.

10. **Juybari, J** 2017. *The Influence of Loans in the College Major Market*. American Association for the Advancement of Science (AAAS), Annual Conference.
11. **Juybari, J** 2016. *The Influence of Loans in the College Major Market*. AAAS, Pacific Division Annual Conference.
First place in the Economic, Political, and Social Sciences section and the division-wide Robert I. Larus Award.
Link
12. **Juybari, J** 2016. *Do Student Loans Affect College Major Selection?* San Diego State University Student Research Symposium.
An Undergraduate Research Excellence Award, given to several students for recognition of scholastic achievement
13. **Juybari, J** 2016. *Do Student Loans Affect College Major Choice?* Social Science Student Symposium.
14. Auldridge, T, **Juybari, J** 2015. *Problem-Posing and the Prospect of Reforming the Sciences and the Humanities*. AAAS Annual Conference.
15. Auldridge T, **Juybari, J** 2014. *How Altering Our Educational Philosophy Can Bridge the Divide Between the Sciences and the Humanities*. American Association for the Advancement of Science (AAAS), Pacific Division Annual Conference.
Presidential Award, division-wide only given to 7 participants, and First Place in the Economic, Political, and Social Sciences section