Jeremy B. Juybari

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Experience

Faster Logic, LLC — San Diego, California
Chief Executive Officer · Business Development and Project Management — *July 2021 - Dec. 2021*

- **Chief Executive Officer**: Oversaw daily operations from submission of contract deliverables, payroll, legal, conctract administration, human resource issues and negotiations. Even with multiple ongoing issues, DCAA audit, incorrect accounting system, and personnel issues the company sucessfully completed the Phase I Option conctract for the Office of Naval Research. Learned about the challenging aspects of running company, project management, and prioritization.
- **Engineering Support**: Associate Project Engineer from June 2020 - June 2021. Managed various research projects from 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 — Orono, Maine
Senior Leadership Role · Lab Programs — *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.

Omni Profit — Baltimore, Maryland
Company Co-Founder · Business Website Development — *Jan. 2018 - Present*

- **Cybersecurity**: Respond to firewall activity, handle hacking attempts, and work on WordPress login hardening.
- **Data Analytics**: Set up Google Analytics, Google Search Console, Google Adsense, and website speed metrics. Analyzed data from multiple sources to understand user engagement.
- **WordPress**: As site admin ensure website continuity, develop new interactive content and manage framework upgrades.

Projects

Deep Learning and the Wavelet Transform Modulus Maxima (WTMM) method: My PhD dissertation aims to explore 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 master's thesis investigated how image saturation affects the resulting statistics from the Wavelet Transform Modulus Maxima 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 Orono, Maine
PhD in Electrical and Computer Engineering; GPA 4.0 *Expected Graduation May 2024*

University of Maine Orono, Maine
M.A. in Mathematics; GPA 3.67 *Graduation May 2020*

San Diego State University San Diego, California
Majors: Economics and Interdisciplinary Studies (Valedictorian); Honors GPA 3.91 *Graduation Aug. 2017*

Conference Proceedings and Abstracts

1. Brewer, P, Moberly, R, **Juybari, J** 2021. *A comparison of zero and minimal intelligence agendas in Markov Chain voting models*. OSF Preprints.
2. Greenlee, A, **Juybari, J**, Tilbury, K, Khalil, A 2021. *Multiscale Image Colocalization: Generalizing Pearsons Correlation Coefficient*. Maine Biological and Medical Sciences Symposium.
3. Greenlee, A, **Juybari, J**, Tilbury, K, Khalil, A 2021. *Multiscale Image Colocalization*. UMaine Student Symposium.
4. 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
5. Harling, M, Blaszkiewicz, M, Willows, J, Johnson, C, Townsend, K, **Juybari, J**, Khalil, A, Tilbury, K 2019. *Optically Exploring Neuropathy in Adipose Tissue Using New Colocalization Metrics*. Biomedical Engineering Society's National Meeting.
6. **Juybari, J** 2019. *The Effects of Image Saturation on Multifractal Statistics*. UMaine Student Symposium.
7. **Juybari, J** 2017. *Time Scale Profile of Risk in Foreign Exchange Markets*. San Diego State University Student Research Symposium.
8. **Juybari, J** 2017. *The Influence of Loans in the College Major Market*. American Association for the Advancement of Science (AAAS), Annual Conference.
9. **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
10. **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
11. **Juybari, J** 2016. *Do Student Loans Affect College Major Choice?* Social Science Student Symposium.
12. Auldridge, T, **Juybari, J** 2015. *Problem-Posing and the Prospect of Reforming the Sciences and the Humanities*. AAAS Annual Conference.
13. 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