Looi Shen Wei Brendan

10 Lorong Kota Raja, Taman Bukit Seputeh – WP Kuala Lumpur – Malaysia

📱 +(60) 16-661 1838 ● ✉ shenweilooi@gmail.com ● in brendanlooi

I am a recent graduate in Applied Mathematics achieved at Colorado State University. I have a passion for mathematics and programming, specifically where mathematical concepts are used to improve and optimize a progressively digital world.

Education

Colorado State University — **Fort Collins, CO**
Bachelor of Science in Mathematics, Concentration in Applied Mathematics – Computer Science — *Graduated May 2021*

- **Relevant Mathematics Coursework:** Fourier and Wavelet Analysis, Numerical Analysis, Abstract Algebra, Ordinary/Partial Differential Equations, Advanced Calculus of One Variable, Projects in Applied Mathematics

- **Relevant Computer Science Coursework:** Software Development, Information and Coding Theory, Post-Quantum Cryptography, Mathematics of Information Security, Data Structures, Discrete Structures

Technical Skills

- **Programming Languages, Frameworks & Tools:**
  - Languages: Bash, **C**, **C#**, **C++**, **mySQL**, Matlab, **Maple**, Java, JavaScript, **Python**, LaTeX, Haskell, Ada 95, R, PHP
  - Frameworks & Tools: NumPy, Websocket, Numba, PyTables, Jupyter, Git, WSL2, Powershell, EC & DLP cryptosystems

- **Mathematical Skills:**
  - Able to recognize shifting priorities within theoretical problems and their applications
  - Advanced ability to utilize software to solve problems within the scope of mathematics
  - Quickly and efficiently apply different concepts within mathematics to real-world problems

Work Experience

Software Engineer — **Penang, Malaysia**
Onboard Technologies – Python & C++ Development Team — *July 2022 – Present*

- Develop and maintain a high-performance trading platform; handling hundreds of thousands of trades a day with low latency
- Work closely with stock exchange technology & APIs to ensure efficient & reliable connectivity
- Continually adapt to changes in exchange platforms and refine software architecture, seeking new ways to gain a technical edge
- Design and implementation of trading system features, expanding to new markets, & resolving live issues during trading hours
- Implemented professional software design & testing methodologies to improve & expand the platform using Python & C++
- Involved in critical sectors of the technology stack, including the market data layer, order management system layer, inter-process communication systems, monitoring systems, alerting systems, & graphical interfaces

Junior Software Developer — **Kuala Lumpur, Malaysia**
Stampede Solution – C# Volare Development Team — *July 2021 – July 2022*

- Improved and optimized Volare, the main FinTech product, to decrease workflow ineffeciencies for users
- Identified and mitigated multiple complex, critical flaws within the full product stack
- Worked in C# with mySQL, Vicidial, Ozeki, bash, PHP and several internal libraries

Projects & Research Experience

Clebsch Map Modeling of Cubic Surfaces — **Colorado State University**
Department of Mathematics – Dr. Anton Betten — *Jan 2020 – May 2020*

- Developed novel solutions for optimizations of non-trivial implicit surface modeling
- Probing surface representation spectra for real world applications including cryptography and tessalation
- Worked in Maple, MATLAB, Python, and C++

Visualization and Quantization of Implicit Surfaces — **Colorado State University**
Department of Mathematics – Dr. Anton Betten — *Aug 2020 – Dec 2020*

- Exploration of exotic mapping methodologies for physical data visualization and surface property characterization
- Optimized tools for topological analysis of compute heavy implicit surfaces
- Applied ideas from Coding Theory, Differential Geometry and Group Theory hello