Shen Wei Brendan Looi

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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: Android API, Sagemath, Jupyter, Git, Elliptic Curve & Discrete Logarithmic Problem 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 — **Kuala Lumpur, Malaysia**
Stampede Solution – C# Volare Development Team — *July 2021 – Present*

- Improved and optimized Volare, the main FinTech product, to decrease workflow ineffeciencies for users
- Identified and mitigated multiple complex, critical flaws with product stack through backend and frontend methods
- 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

Comparing Fast Fourier Transform Algorithms for Beamforming — **Colorado State University**
Department of Mathematics — *Feb 2021 – April 2021*

- Researching the most efficient FFT Algorithms in real world applications of beamforming as used in 5G and WiFi 6.
- Working with peers in electrical engineering to apply objectives directly to hardware