Steven Chang

(445) 260-7301 | zawmin.stevenchang@gmail.com | linkedin.com/in/zminsc/ | github.com/zminsc

EDUCATION

University of Pennsylvania — May 2026
B.S.E. in Computer Science | GPA: 3.87 / 4.00

- **Relevant Coursework**: Data Structures & Algorithms, Programming Languages & Techniques, Operating Systems, Databases, Scalable & Cloud Computing, Computer Graphics, Mathematics for Computer Science, Calculus, Linear Algebra, Probability
- **Languages**: C, C++, C#, Java, OCaml, Python, OpenGL Shading Language, CSS
- **Tools & Libraries**: Git, GNU Debugger, Valgrind, Makefiles, JUnit, NumPy, Pandas, PyTorch, Unity, Apache Maven

EXPERIENCE

ATLAS Collaboration (atlas.cern) — May 2023 – Aug. 2023
Software Developer Intern — *Philadelphia, PA*

- Determine if GNNs can predict particles from detector hits with $\geq 95\%$ accuracy while training on small datasets.
- Build GNN with PyTorch Geometric's MetaLayer module, customizing network layers to fit given datasets.
- Maintain data pipelines, scripting with pandas DataFrames to convert large CSV files to ROOT for GNN input.

University of Pennsylvania — May 2023 – Present
Computer Science Teaching Assistant — *Philadelphia, PA*

- Lead 20-student recitation to teach key concepts in functional (OCaml) & object-oriented (Java) programming.
- Conduct weekly office hours, assisting $\sim$15 students per 2-hour session in problem-solving & debugging code.
- Write rubrics to grade homework & exams, ensuring consistency & objectivity in evaluating student performance.

KMD Group of Companies (kmd.com.sg) — May 2022 – Aug. 2022
Data Science Intern — *Singapore, Singapore*

- Perform second-order data normalization on large legacy datasets, removing 50% of redundant data.
- Manage backend learning management system database with $\sim$5000 items using SQL queries and scripts.
- Analyze e-commerce websites to identify best design practices and compile detailed reports for supervisor review.

Myanmar Children Health Project — Jan. 2019 – May 2022
Treasurer — *Yangon, Myanmar*

- Design organization budget to effectively manage cash transactions with Google Sheets and Google Apps Script.
- Organize meetings with 72 sponsors, donors and organizations to raise 5200 USD towards Hepatitis B vaccines.
- Regulate organization's primary funding model through monthly accounting, data analysis and client interviews.

PROJECTS

PennOS | *C, GDB, Valgrind* — Oct. 2023

- Collaborate on Unix-like operating system with FAT filesystem & multi-queue scheduler runnable as program on host OS, providing support for basic Linux commands, file reads/writes & job control.
- Prevent 100% of memory leaks & errors through proper process isolation, stack-saving & timely malloc/free calls.

Mini-Minecraft | *C++, STL, OpenGL Shading Language (GLSL), GLM API, Qt* — Sep. 2023

- Collaborate to build real-time Minecraft clone in C++, using GPU shaders & optimizations for smooth gameplay.
- Leverage C++ thread library to implement multi-threaded terrain generation, decreasing render times by $10\times$.
- Utilize raycasting to detect collisions & ensure precise control over player movement, allowing sliding along walls.

ToDoPlanner | *Java, JavaFX, CSS, SQLite, Apache Maven* — Mar. 2022

- Develop a portable JavaFX desktop app to effectively handle a client's task and schedule management needs.
- Integrate multiple productivity systems to reduce client time expenditure on daily organizational duties by 70%.
- Plan app and database on Lucidchart through various UML and data flow diagrams, emphasizing modularity.