Jonathan Zeng

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Education

Yale University Expected Graduation Date: May 2028

Bachelor of Science in Computer Science and Mathematics

- **GPA**: 3.93/4.0
- **Relevant Coursework**: Introduction to Systems Programming and Computer Organization, Data Structures and Programming Techniques, Building Game Engines, Analysis 1, Discrete Mathematics, Linear Algebra

Experience

Student Researcher June 2025 – Present

Shah Lab, Yale University

- Designing a faster Wavefront .OBJ parser to load and reload 3D objects using multithreading and SIMD
- Testing the effects of various C++ optimizations on performance, such as thread affinity, profile-guided optimizations, and memory-mapped files, resulting in a 41% performance increase over other parsers
- Collaborating with Professor Shah and other undergraduates to discuss methods and results

Software Engineer July 2025 – Present

Solis Consulting

- Building RoofRoute with Kotlin in Android Studio, an app for roof repair canvassers to find an optimal route of homes to canvass based on parcel and storm data
- Designing the UI and layout of the app and implementing additional features like voice transcription with AI-assisted summary and account management
- Managing backend database on Render.com containing GIS parcel data for over 15 NC counties

Student Researcher June 2023 – March 2024

I^3T Research Lab, ECE Department, Duke University

- Created and analyzed a game-engine based dataset for monocular Simultaneous Localization and Mapping (SLAM) algorithms using OpenCV for python and the Unreal game engine
- Conducted additional experiments on various SLAM parameters and found optimal number of features, levels, and scale factor for current state-of-the-art SLAM systems
- Presented research at NC Science & Engineering Fair, SNCU Research & Creativity Symposium, and lab meetings

Teaching Assistant August 2023 — May 2024

NCSSM Computer Science Department

- Assisted students in all computer science courses with office hours, events, and online tutorials
- Updated Computer Science Department website and social media with CS opportunities and newsletters

Projects

Seaside Scavenger | *Lua*

- Designed and programmed a matching puzzle video game with Lua and the Love2D framework
- Drew all sprites, models, and backgrounds in a pixel-art style with Aseprite
- Play-tested game with peers using a feedback survey and wrote QA report on iteration process

Technical Skills

Languages: C, C++, Python, Java, SQL, Kotlin, Lua, D, C#, HTML, CSS
Tools: Git, Linux, Visual Studio, Unity, Godot, PyCharm, IntelliJ, Eclipse
Libraries: OpenGL, PyTorch, TensorFlow, OpenCV, NumPy, MatPlotLib, Pandas

Awards

- American Invitational Mathematics Exam (AIME) Qualifier x 4
- High School Mathematical Contest in Modeling (HiMCM) Finalist (top 5%)
- USA Computing Olympiad (USACO) Silver