
Education

Yale University New Haven, CT

B.S. Mathematics and Computer Science 2020

Relevant Coursework: Computer Graphics; Advanced Computer Graphics; Physics Simulations in Movies, Games, and Fabrications; Data Structures; Vector Calculus and Linear Algebra I; Abstract Algebra; Fields and Galois Theory; Discrete Mathematics; Differential Equations;

Work Experience

Associate Quantitative Strategist at Goldman Sachs– New York, NY

July 2020 to Present

- Lead the ongoing automation project for Private Equity Portfolio Construction, where we streamline the investment allocation process
 - Created and maintain a web-based application for deal allocations, which hooks into vendor products (Dynamo) and feeds various data pipelines (MongoDB, MemSQL, Goldman proprietary data storage)
 - Create automated reports analyzing current and hypothetical portfolios
- Lead the Private Equity Data Driven Investing Initiative; use our 25+ years-worth of private markets data to prove/disprove investment theses and develop statistical tools to guide portfolio/risk management decisions
 - Key developer for Top Down Analyzer, which uses the Monte Carlo method to simulate cash flow activity, fluctuations in valuation, and overall portfolio forward-looking performance in different market environments
- Collaborate with engineering teams to develop data APIs, and meet with Portfolio Managers to discuss our analytics
- Contribute to and support our team's SLang codebase, which queries, processes, caches, and analyzes data in reports and web-based interactive tools for three business verticals (Long Only, Hedge Fund, and Private Equity)

Quantitative Strategist Intern at Goldman Sachs– New York, NY

May 2019 to August 2019

- Developed analysis and visualization web tools for the Private Equity side of the Alternative Investments and Manager Selection group
- Learned SLang, Goldman's proprietary language, completed three webtool projects, and pushed to production for business use

Projects

A Tensor Algebraic Approach to Reduced-Order St. Venant-Kirchhoff Deformations May 2020 (Advisor: Theodore Kim, PhD)

- Expanded on the Chaotic Blobs project below and implemented an alternative approach to reduce the order of Euler-Lagrange equations of motion proposed in Barbic's 2005 paper
- Proposed tensor algebraic internal force and stiffness matrix polynomials, which, unlike the Finite Element Method, can be extended to different kinds of deformations
- Following my graduation, I began research with Professor Kim to implement tensor algebraic polynomials for Neo-Hookean deformations. This research remains unfinished. This project was written in C++ and OpenGL

Chaotic Blobs December 2019 / CPSC 679: Physics Simulations in Movies, Games, and Fabrications

- An implementation of Barbic's 2005 paper Real-Time Subspace Integration for St. Venant-Kirchhoff Deformable Models, with the addition of motion. This project was written in C++ and OpenGL

Shadow Hunters May 2019 / CPSC 439: Software Engineering (<https://shadowhunters.live/>)

- Worked on a student team to turn the board game, Shadow Hunters, into an online, multiplayer hidden-roles game
- Led the front-end development, creating all the visuals with Javascript's Phaser library, and connecting it to our python backend through websockets
- Drew the character art based on the cards contained in the physical game

Happy Blob Animation through Blender Scripts May 2019 / CPSC 479: Advanced Computer Graphics

- Created a short animation of three blobs hanging out in a living room
- Built blender scripts using my own implementations of particle systems, L-systems, sweeping, and scripted motion

WebGL Cake-finder Game December 2018 / CPSC 478: Computer Graphics

- Created a 3D horror game written in WebGL, Javascript, and HTML, using Ganovelli's "Introduction to Computer Graphics: a Practical Learning Approach" envymycode as a base
- Implemented collision detections and a hierarchy of movement (to simulate a walking human)

Skills

Software/Programming Skills: C, C++, Javascript, Python, Java, Blender, Maya, WebGL (limited), OpenGL (limited), MEL (limited), R, HTML and CSS, Racket, Photoshop.

Other: Drawing and Painting, Running, Broomball, Volleyball. Favorite Movie: Coco