

PERSONAL STATEMENT

Researcher and engineer from Columbia University with extensive experience in both research and industry. **5+ years** of experience working in teams. Research in cryptography, VR/HCI, human-data interaction.

Current research interests: type systems, computer graphics, physics simulation, parallel computing, accessibility

EDUCATION

Columbia University | Bachelor's, Computer Science

2026

GPA: 3.9/4.0. Eggleston Scholar (funded research scholarship, ~10/year);

Core Scholar Award; Columbia Tau Beta Pi Engineering Honors; Dean's List

Courses (PhD-level): COMS 6998 Readings in Language Design (Bjarne Stroustrup), COMS 6998 Foundations of Blockchains (Tim Roughgarden), COMS 4995 C++ Language Design (Stroustrup), COMS4118 Operating Systems, COMS4610 Computer Graphics, COMS4115 Programming Languages, CSOR4231 Analysis of Algorithms, COMS4705 Natural Language Processing, COMS4261 Cryptography, COMS4236 Computational Complexity, MATH4061 Real Analysis I, MATH4041/2 Modern Algebra I/II

PUBLICATIONS

[2022] Thomas Chen, Hui Lu, Teeramet Kunpittaya, Faith (Alan) Luo. **A review of zk-snarks**. arXiv preprint arXiv: 2202.06877. 68 citations. [[Google scholar link](#)]

WORK EXPERIENCE

Engineer @ thatgamecompany

2023 -

Engineer at a record-breaking and historical game studio. Gameplay systems for Sky: Children of the Light (光遇). Project Champion (Lead) on RealQuest strike. Live services, systems engineering, animation, particle systems, memory management, networking, microservices, etc.

Co-Founder @ Dark Forest (twitter.com/darkforest_eth)

2021

Experimental decentralized real-time platform with **24k+ followers** on Twitter ([@darkforest_eth](https://twitter.com/darkforest_eth)). Covered by MIT Technology Review. Scaling for thousands of concurrent players, Typescript, React, WebGL, graphics optimization, etc.

Quantitative Developer Intern @ D. E. Shaw

2023

Static and dynamic analysis, financial tooling infra.

Software Engineering Intern @ Figma

2022

Editor Experience. Plugins, extensibility, Typescript, React, WebGL, C++.

RESEARCH EXPERIENCE

Student Researcher @ Columbia University

2021 - 2022

Cryptography research under Prof. Tim Roughgarden. 68 citations on arXiv preprint.

Applied Cryptography Researcher @ Ethereum Foundation

2020 - 2021

Developing applications using experimental applied cryptography.

Student Researcher @ Columbia Graphics and User Interfaces Lab

2019 - 2020

VR and HCI research with dentistry.

Student Researcher @ Tufts Visual Analytics Lab

2017

Feature engineering, human-data interaction.

PROJECTS

[2024] **UnitLib** - A highly-optimized C++ matrix and vector library supporting arbitrary SI units and beyond. Comparable to or faster than glfw, the industry-standard matrix library, in a fraction of the lines of code. [[github](#)]

[2025] **xml-peruse** - A typed and memory-optimized XML parser for typescript/javascript. [[github](#)]

[2025] **charizardb** - Japanese-Chinese cross-linguistic (klh)an(jlz)i mapping. [[github](#)]

[2023] **Sappho in Space** - An interactive ASCII art game implemented entirely in the browser. [[github](#)] [[web game](#)]

[2017] **Little Planet Procedural** - Procedural landscapes generated in the browser. 100+ stars on Github. [[github](#)] [[demo](#)]

TEACHING AND OUTREACH

High School Mentor: Summer Camp for Applied Rationality (SPARC), a STEM program for high schoolers, 2021, 2022.

Teaching Assistant: Programming for Social Impact (Columbia): Fall 2019, Spring 2020, Fall 2022

SKILLS

Programming Languages: C++, Typescript/Javascript, React, Python, C, Java, LaTeX, Linux shell, Mathematica

Spoken Languages: English (native), Chinese (fluent), Japanese (conversational)