

ALEXANDER TU

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Education

Purdue University

B.S. in Computer Science and B.S. in Mathematics

August 2023 - December 2025

West Lafayette, IN

Relevant Coursework

- Object Oriented Programming
- Tools
- AP Statistics
- Introduction to Quantum Computing (IBM)
- Fundamentals of Programming (Carnegie Mellon University)

Work Experience

INDOXI Jewelry

May 2023 – August 2023

Apprentice Jeweler and Website Developer

Greenwich, CT

- Designed and created rings from scratch based on special requests; Apprenticed and learned how to utilize appropriate machinery such as a blowtorch and laser welder for soldering, as well as ring shaping with a mandrel and gem setting
- Used Webflow to customize and construct a website for the company, increasing traffic to website and creating a convenient online market for store owner; fixed image rendering, debugged functionalities of interactive flipbooks
- Finished off pieces for selling commercially; Learned to polish with pendant motors, sandpaper, rubber burrs and tumblers

All Talent Academy

June 2020 – August 2023

Lead Piano Tutor

Greenwich, CT

- Co-designed curriculum for players as young as 4 years old in group classes and camps; Taught music theory and prepared students for music recitals
- Students have attended competitions and passed tests such as: Elite International Music Competition, Carnegie Hall's winners recitals, Royal Conservatory of Music Theory exam level 5

Carnegie Hall

August 2019 – August 2023

Master of Ceremonies

Manhattan, NY

- In charge of the opening and closing ceremony for numerous recitals; Enthusiastically announced performers and managed backstage traffic; Relaxed and comforted backstage performers; Trained communication skills
- Helped organize Elite International Music Competition New England Division

Projects

PurdueMosaic | [GitHub](#) | *Express, Node.js, Javascript, HTML/CSS, Socket.IO*

2023

- Collaborated in a group for Purdue's Hello World Hackathon: A global pixel canvas with drawing prompts and a timer
- Incorporated back-end logic such as timer sync across servers with Socket.IO and canvas clear with Express and Node.js
- Implemented front-end elements such as canvas, timer, favicon and logo display using HTML and CSS
- Created a custom logo and favicon with the graphic design computer software Pixlr

Fireworks Display | [GitHub](#) | *p5.js, Javascript, HTML/CSS*

2023

- Created a responsive fireworks display using p5.js incorporating mathematical polar equations for firework shapes

Rhythm Based Dungeon Crawler | [GitHub](#) | *Python, TKinter, Pillow*

2022

- Enhanced a path-seeking algorithm called Drunkard's Walk by manipulating data structures and utilizing a stack to generate terrain; Implemented rhythm logic based on a sliding block, in-game health and enemy movement logic
- Designed custom enemy sprites and worked on front-end development of the board and instruction display

Chess in Terminal | [GitHub](#) | *Java*

2021

- A complete two player version of chess playable in terminal that detects and returns legal moves
- Created algorithms to detect checkmate and stalemate; implemented castling and enpassant functionality

Skills / Involvement

Languages: Python, Java, HTML/CSS, JavaScript, Rust, LaTeX, Swift

Technologies/Frameworks: JFrame, p5.js, Pillow, TKinter, Git, JUnit, Socket.IO, React.js, GoDot, Express, Node.js

Interests/Involvements: Purdue Hackers, SIGApp Development Club, Bouldering Team, Badminton, Jewelry Making

Honors

Presidential Volunteer Service Award: Silver Medal

Air Force Association's CyberPatriot: Plat Divison National Semifinalist

National Merit Commended Scholar