Darren Liu

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SKILLS

Programming Languages: Python | Java | HTML | CSS | JavaScript
Technologies: Arduino | WPILib | JFrame | Discord API | RPi | Maya

PROJECTS

Portfolio Website   March 2024
- Used HTML/CSS/JS to make a website displaying my projects, skills, and experience
- Utilized styling tricks such as scroll animations, fading text, and an image carousel to bring the website to life

Botanical Bestie - Hack The Valley 8   Oct 2023
- Meant to make owning a plant more engaging, we built a functional flower pot project that tracks its humidity/light levels, using an AI personality to communicate its needs
- Coordinated the moisture/light sensors with an LCD and LED matrix using Arduino IDE (C++)

My Trainer - DeltaHacks 9   Jan 2023
- Developed web app that utilized computer vision to count user's workout reps and provide encouragement
- Worked on the frontend, using tricks such as parallax and hover animations to create a simplistic UI

EXPERIENCE

Programming Lead at FRC Team 7902   Oct 2022 - Present
- Acted as project manager for a team of 6, managed timeline, contributing **10,000** lines of code
- Held weekly meetings teaching the fundamentals of a subsystem-command/OOP approach to coding
- Applied control systems concepts such as PID feedback loop, feedforward, odometry, command groups
- Integrated an RPi vision processing client, involved in signal wiring, crimping connections, networking
- Achieved finalist award at Centennial event and judges award at Durham event as the robot operator

AliceHacks Outreach Coordinator   March 2023 - Nov 2023
- Engaged over **400** registrants in **30+** different countries with over **90** project submissions
- Reached out to potential sponsors, assisting in acquiring **$1000** for funding
- Worked on logistics, scheduling, prize distribution, workshops, events, judging, and promotional videos
- Helped run various events, such as hosting the talent show, casting the League of Legends tournament, and co-hosting the cooking show

Math Instructor at Mathnasium Markham   Aug 2022 - Present
- Helped students learn new math concepts using Socratic questioning and strategic intervention
- Working on a 4:1 ratio, teaching 60+ students per shift
- Saw a drastic improvement in confidence and achievement in students from a K to grade 12 level

Pure Math Mentee - UofT St George   Jan 2023 - Present
- Attend weekly 1:2 sessions learning about topology from a PhD student
- Connecting topology to fields of math such as group theory, abstract algebra, and combinatorics
- Creating a research project alongside another student regarding the composition of covering maps

EDUCATION

Unionville High School | STEM program   2020 - 2024
- Co-founder of STEM fellowship outreach council
  - Held Microbit workshops with 9th-grade and elementary students on a 1:15 ratio, teaching core coding concepts and introducing many students to coding for the first time
- DECA chapter member
  - Competed in finance and hospitality events in consecutive years, qualified and attended provincials
  - Reinforced improvisation, public speaking, critical thinking, and general business skills
- Top 6 Average: **97.0%**

ACHIEVEMENTS

- Math contest distinction (top 25%) - CCC 2024, Euclid 2023, CSMC 2023, Cayley 2022
- Performance with honours - COMC 2022, COMC 2023
- Hackathons - 3rd overall at Hack The Valley 7, Best Health Hack at DeltaHacks 9, Best AI Hack at YRhacks 23, 1st Place Overall at TurtleHack