

IAN DOUGHERTY

COLLEGE STUDENT

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EXECUTIVE SUMMARY

20-year-old computer science major with a background in web development. Moving forward with a focus on algorithm design and application.

EDUCATION

Illinois Institute of Technology

Expected completion of co-terminal program in 05/24:
B.S. Computer Science
M.S. Computer Science

LANGUAGES & FRAMEWORKS

- JavaScript
- HTML/CSS
- React.js
- Node.js
- Ruby on Rails
- SQL
- C
- C#
- Python
- Java
- Git

PROJECTS (SEE WEBSITE)

2D Rigid Body Physics Engine

Vanilla JavaScript & HTML5 Canvas

- Uses a multitude of algorithms to efficiently find collisions and produce a contact manifold
- Iterative impulse resolution to support box stacking
- Packaged into a framework to easily deploy in other projects

3D Engine

Vanilla JavaScript & HTML5 Canvas

- Realtime projection, plane ordering, and shading algorithms
- Quaternion rotation for efficient camera movement
- Built in mesh builder from Bézier patches

Realtime Multiplayer Game Framework

JavaScript using WebSockets in Node.js

- Server-side architecture
- Client-side prediction and server reconciliation
- Serializes data to reduce ping times

WORK EXPERIENCE

Online Programming Instructor

iD Tech Camps | Summer of 2021

- Taught fundamentals of JavaScript to grade school students
- Lectured for two hour long sessions five days a week
- Designed supplementary material to assist curriculum

OAF Micro-Internship

Open Avenues Foundation | Winter of 2021

- Designed & developed a full-stack personal expense tracker
- Integrated a React front-end and a Ruby back-end

Computer Graphics Programmer

Freelance | 2019 - present

- Created HTML5 canvas animations for clients
- Animations have been used for student films and concert graphics