Freddie Nelson

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Skills

Programming Languages: HTML, CSS/SCSS, JavaScript/TypeScript, Python, SQL, Go, C, PowerShell

Technologies: Vue.js, React.js, Node.js, Express.js, Electron, Socket.IO, Three.js, MongoDB, MySQL, Postgres

Tools: Git, Github, Digitalocean, Docker, Netlify, Heroku, Figma, Photoshop, Trello, AWS, Jira, Slack

Education

Computing Science MSci, University of Glasgow   September 2022 – May 2027 (Expected)

    Notable Achievements: 100% 1st year semester 1 programming course

St Ninian's High School   August 2016 – June 2022

    Adv Highers: Mathematics (A), Computing Science (A)

    Highers: Mathematics (A), English (A), Computing Science (A), Physics (A), Geography (A)

    NPAs: Cyber Security SCQF Level 6, Computer Games Development SCQF Level 6

Experience

Coding Tutor, Code Cadets   September 2022 – Present

- Led basic web development lessons with groups of primary school children
- Broke down complex technical topics to be understood by children aged six to fourteen
- Collaborated with my team to create a fun and engaging environment for the kids

Fullstack Web Developer (Contract), Cutout   October 2022 – November 2022

- Solely developed the Cutout web app from alpha to beta stage in four 1-week sprints
- Worked closely with client to take his designs and mock-ups to production
- Created admin dashboard for reporting and monitoring of analytics and user activity
- Implemented improved onboarding features to increase user conversion rates

Student Systems Engineer, NVT Group   July 2022 – September 2022

- Worked with a team of engineers to diagnose and solve client IT issues remotely
- Filled the VDC and Voice Specialist seat (Onsite) for 150+ hours during the 2022 Birmingham Games
- Created a Node.js script to integrate Cove backup alerts with ServiceNow ticket system
- Deployed a PowerShell script to resolve a frequently occurring ticket in seconds, previously over an hour

Projects

Scuffed Uno (live site)

- A web game based on the card game UNO with over 50,000 monthly players
- Created custom 3D models and animations with Three.js and Tween.js
- Implemented a live chat utilizing websockets based on user feedback
- Cooperated with a game advertising agency to monetize the site

Haggis Lang (code) (live site)

- An interpreter for 'haggis', a reference language originally created for use in SQA exam questions
- Handwritten scanner and recursive descent parser following original language spec
- Implemented type checker and semantic analysis stages to ensure input code is valid
- Built a web playground complete with syntax highlighting and input/output in Vue.js

Blaze 2D (code) (live site)

- A 2D WebGL 2 game engine written from scratch in TypeScript
- Custom physics engine for dynamics, collisions and constraints simulation
- Implemented SPH and metaball rendering for fast 2D fluid simulation
- Developed a batch renderer with automatic texture swapping and atlas building

Shorty.lol (code) (live site)

- A URL shortener and tracker built with React and Express
- Implemented type safe API calls from client with React Query
- Created username and password authentication utilizing JWTs for sessions
- Used Prisma ORM with Planetscale database for highly scalable and flexible DBA

PowerShell TicTacToe (code)

- TicTacToe built entirely in PowerShell with no external dependencies
- Designed reusable functions to create basic user interface inside of the terminal
- Utilised peer to peer networking to allow for serverless local online multiplayer
- Implemented minimax algorithm for AI with varying difficulty levels (easy to unbeatable)