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PORTFOLIO

User-friendly frontend and high-performing backend

- Developed a social media website. Used TypeScript and atomic design principles to create a scalable, maintainable, and modular architecture. [Link](#)
- Developed an e-commerce website. Used React for the frontend, and followed Google Material Design principles. Used Django for the backend and optimized database operations. [Link](#)
- Developed a project management website, ensuring broad browser compatibility by avoiding experimental CSS properties. [Link](#)
- Ensured consistent website appearance across devices, operating systems, browsers, and platforms. [Link](#)
- Utilized React Native to transform websites into Android and iOS apps, with access to native APIs such as microphone and camera, beyond page display. [Link](#)
- Verification emails display elegantly on both phones and computers, featuring HTML content rather than plain text for a polished appearance. [Link](#)
- Consider screen height for optimal mobile keyboard experience. Due to inconsistent emoji styles across browsers/devices, all emojis were replaced with hosted images. Created a separate site with 7000+ generated emoji images. [Link](#)
- Adapted to mobile device orientation (horizontal or vertical) for optimal user experience. Leveraged native media capabilities, including the front camera, to fully utilize mobile device features. [Link](#)
- Considered native events, such as touch on phones and mouse on computers, to enhance user interaction. [Link](#)
- Implemented an unconventional responsive web design method to ensure consistent display across all device sizes. Set a defined minimum width for the body element; for screens narrower than this limit, the entire website scales down proportionally. [Link](#)
- The video demonstrates user interactions in a chat room, showcasing image sharing and viewing. [Link](#)

Data visualizations with Scalable Vector Graphics (SVG)

- Designed a business dashboard with SVG graphs for crisp data visualization. [Link](#)
- Animated force graph. [Link](#)
- Graphical heat map. [Link](#)
- Graphical scatter plot. [Link](#)
- Intuitive tree map. [Link](#)
- Interactive heat map. [Link](#)

Mathematical art and sound analysis programs

- Used a 3D function to create a visual special effect. [Link](#)
 - Used a 3D function to create a visual special effect. [Link](#)
 - Used a 2D function to visualize music. [Link](#)
 - Used a 3D function to visualize music. [Link](#)
 - Visualized a ringback tone that plays when callers delay answering inbound calls. [Link](#)
 - Designed hearing aid software that records and enhances frequencies for those with hearing impairments. [Link](#)
 - Developed a systematic program for learning how to draw stars. [Link](#)
 - Possess a solid understanding of the mathematics behind artificial intelligence. The AI programs are presented in the videos below. [Link](#)
 - The video illustrates the equation of a radio signal. The radio is presented in a video below. [Link](#)
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Samples of artificial intelligence programs

- Developed AI for automated vehicle detection in video feeds, showcased as a demonstration. [Link](#)
 - Developed AI to generate jazz music, showcased as a demonstration. [Link](#)
 - Developed AI to generate poems, showcased as a demonstration. [Link](#)
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Game-development skills

- Used face-detection artificial intelligence to steer the player based on facial direction. Used algorithms for maze generation and guiding sheep movement. [Link](#)
 - Used hand-detection artificial intelligence to direct the player based on hand gestures. Closing the hand triggers flight while opening it triggers descent. [Link](#)
 - Used face-detection artificial intelligence to control the player's actions, where bird flapping strength corresponds to the player's mouth area. [Link](#)
 - Used artificial intelligence to craft an unbeatable bot, providing a challenging experience for players. [Link](#)
 - Sample of a real-time interactive multiplayer game. [Link](#)
 - Sample of 3D game. [Link](#)
 - Sample of 3D game. [Link](#)
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Additional expertise: hardware skills

- Built an arcade cabinet. [Link](#)
- Built a robot pet. It can tell you jokes, tell time, answer knowledge questions from Wikipedia, and open music from YouTube. [Link](#)
- Built a car that can be remotely controlled by a mobile app. [Link](#)
- Built a handheld game console. [Link](#)
- Built a radio. [Link](#)
- Built a mechanical bird. [Link](#)
- Built a lamp out of LEDs. [Link](#)
- Built a digital clock. [Link](#)
- Programmed and configured industrial computers. [Link](#)