

# Kenneth Ye

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## TECHNICAL SKILLS

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**Languages:** JavaScript, Python, Java, C/C++, HTML/CSS, SASS, Racket

**Frameworks:** React, Node.js, D3.js, Express.js, MongoDB

**Developer Tools:** Git, Linux CLI, Bash, VSCode, Eclipse

## PROJECTS

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### 🔗 **AccessibleGPT** | *Express, React, HTML, CSS, JavaScript, Git*

- Built an accessible AI chat application featuring text-to-speech and high contrast mode, designed specifically to make ChatGPT more accessible to the visually impaired using **React** with an **Express.js** backend
- Integrated **OpenAI's GPT API** by implementing a **RESTful API** to communicate user messages and OpenAI GPT responses from end to end, resulting in AI-driven responses to user's messages and text-to-speech capabilities
- Deployed a **MongoDB** Atlas Database to store threads and message logs, optimizing data storage and retrieval, resulting in a 20% improvement in query performance, and reducing latency for real-time interactions.

### 🔗 **Aho-Corasick Algorithm Visualizer** | *React, D3, HTML, CSS, JavaScript, Git*

- Built a interactive React web app that visualizes how the **Aho-Corasick** string search algorithm works by using **D3.js** to produce a dynamic visualization of the Aho-Corasick **finite-state machine** (FSM)
- Created a tree data structure within **JavaScript** using Objects to represent the FSM, and recursively parsed the tree into **JSON** for D3.js to visualize, resulting in a intuitive implementation and visualization of the algorithm
- Coded the algorithm and created an animation of how the algorithm searches through the FSM using **JavaScript**

### 🔗 **Personal Portfolio Website** | *React, HTML, SASS, JavaScript*

- Utilized **React** to create a dynamic front-end user interface with optimized performance and interactivity
- Implemented client-side routing with React Router to route between pages without full-page reloads or making any server requests, leading to faster navigation and a more streamlined user experience
- Incorporated animations using animate.css and styled pages using **SASS**, increasing the visual appeal of the website and making the UI more responsive

## EXPERIENCE

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### **Math and Science Tutor**

Mar 2022 – Feb 2023

*Schoolhouse World*

*Remote - Mountain View, CA*

- Tutored students on the content of AP Calculus AB, AP Physics 1, and AP Chemistry over Zoom
- Audited fellow tutors' sessions to maintain and enforce the platform's guidelines and rules, enhancing the overall tutoring quality and safety of the platform
- Ranked **top 5%** out of all tutors for sessions hosted and number of learners impacted, hosting 60+ sessions with 83 learners impacted across 10 countries and receiving **101 positive ratings**, with 61 super helpful ratings

### **Co-Founder**

Sep 2021 – Jun 2023

*Extra Mile*

*Mississauga, ON*

- Conducted lectures and tutored students on key concepts covered in AP Physics 1 and AP Calculus, increasing comprehension and skills in students
- Organized peer-study groups for **70+ students** to help students prepare for various math contests and AP exams, creating a welcoming community for students to support and assist each other in studying
- Hosted mock AP Calculus AB and AP Physics 1 exams for students, allowing students to simulate exam environments

## EDUCATION

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### **University of Waterloo**

Waterloo, ON

*Bachelor of Computer Science - 3.94/4.0 GPA*

*Sep 2023 – Present*