

# Saad Khalid

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## EDUCATION

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### McMaster University

*Bachelor of Science in Computer Science*

Hamilton, ON

*Sept. 2022 – April. 2026*

- **Elected** computer science representative for my incoming class
- Recieved **Engineering Award of Excellence** entrance scholarship

## EXPERIENCE

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### PadawanDAO

*Core Developer*

Jan. 2022 – Mar. 2022

*Toronto, Canada*

- Developed dashboard in **React.js** and **Firebase** to showcase students we sponsored to attend ETHDenver 2022
- Reviewed pull requests to main repository, was **one of two** core members authorized to push to production.

### The Coding Foundation

*Programming Mentor (Python3 and Javascript)*

Feb. 2021 – Apr. 2022

*Virtual*

- Drafted an intuitive, introductory python3 curriculum for school-aged children
- Delivered engaging virtual lectures and 1-on-1 mentoring sessions
- Tracked students' progress learning OOP principles to optimize future sessions for progress and understanding

## PROJECTS

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### Anonymized Chat App | *React.js, Node.js, Next.js PostgreSQL, Typescript, Prisma.js, Jest, Socket.IO, Supabase*

- Developed unit and integration tests using Jest reaching **85% coverage** optimizing development workflows
- Pitched app to **50+** Web3 enthusiasts at Buildspace Nights & Weekends demo day
- Configured server-side rendering with Next.js to speed up achieve **90% Google page speed score** improving UX

### AI Driven Sentiment Analysis Web App | *React.js, Typescript, Tensorflow, Flask, Socket.IO, Next.js*

- Trained an NLP model on a dataset of Tweets to learn to extract sentiment from text
- Designed event-driven backend using Flask and Socket.IO to handle state changes
- Built text editor using **headless library** (draft.js) and encapsulated the logic as a reusable React component

### Convolutional Neural Network from Scratch | *Python, Tensorflow, Numpy, SciPy*

- Implemented original CNN model outlined in the paper Gradient-based learning applied to document recognition
- Avoided use of machine learning libraries and frameworks, making use of only linear algebra tooling
- **Encapsulated** convolutional and fully connected layers as objects with standard methods for **modularity**

### Google Calendar Integration for Notion | *Node.js, Typescript, PostgreSQL, Prisma, Jest, GCP, Notion API*

- Wrote integration/unit tests using Jest, ensured all tests ran in isolation using setup and teardown files
- Optimized calls to Notion API to reduce rate usage, preventing http errors
- Used Google Calendar *sync token* API to synchronize multiple integrations across calendars
- **Centralized error handling** to improve user-facing error messages and simplify debugging tasks

### Microsoft Imagine Cup Finalist | *Node.js, Typescript, Azure, Flask, Python*

- Pitched a cloud computing company for federated learning on sensitive medical data.
- Developed a full-stack MVP using **React.js, Flask, and Socket.IO** to showcase application flow
- Iterated our pitch deck using judge feedback to place our team in the **top 16 teams in North America**

## TECHNICAL SKILLS

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**Languages:** Javascript, Typescript, Python, SQL, HTML, CSS, Java

**Frameworks:** React, Node.js, Express.js, Next.js, ChakraUI, Tailwind.css

**Developer Tools:** Git, VSCode, Vercel, Serverless, Jest, Supertest

**Database:** Prisma, MongoDB, PostgreSQL, Firebase, Supabase