

# David Shen

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## EDUCATION

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### Queen's University

*Bachelor of Computing (Honours) in Artificial Intelligence; Dean's Honour List*

Kingston, Canada

2020 – ongoing

## RELEVANT COURSEWORK

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Advanced Data Analytics, Neural and Genetic Computing, Artificial Intelligence, Algorithms, Evolutionary Optimization, Data Structures, Software Architecture, Discrete Math for Computing, Linear Algebra, Differential & Integral Calculus

## EXPERIENCE

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### Junior Full Stack Developer

*Sunwing Travel Group*

May 2023 – Jan 2024

*Toronto, Canada*

- Delivered clean, maintainable code that improved application stability and facilitated smoother feature updates.
- Collaborated across teams to integrate third-party APIs, enriching the application's functionality and offering users a seamless experience.
- Enhanced UI and UX consistency to create an intuitive user journey, with a focus on accessibility and design cohesion.

### Java and Math Instructor

*Triway Education*

September 2019 – January 2020

*Markham, Canada*

- Developed engaging lessons in algorithms and competitive programming for 20+ students, making complex concepts accessible.
- Coached students for the Canadian Computing Competition, encouraging growth in critical thinking and coding.

## PROJECTS

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### Teto Kitty | *Python, PyTorch, Pygame*

Aug 2024 – Present

- Built an AI-driven Tetris bot using alpha-beta pruning and bitboard analysis to make efficient game decisions.
- Trained neural networks in PyTorch to refine bot heuristics, improving move prediction and responsiveness, tested within a custom Tetris game.
- Applied minimax algorithms and reward functions to optimize the bot's gameplay in high-speed, complex scenarios.

### Tournament Scenes | *Python, Matplotlib, Battlefy API, PIL, Tkinter*

Sep 2024 – Nov 2024

- Built an automated system to create animated scenes for the Apple Orchard Cup, a top-level TETR.IO tournament with over 200 players and 500+ live viewers.
- Generated multiple scenes, including animated brackets, versus screens, and commentary overlays, each dynamically updated with real-time data to engage viewers.
- Utilized custom graphics and animation techniques in Matplotlib and PIL to enhance scene quality and visual appeal.

### Practice Bot | *Python, discord.py, MariaDB*

September 2020 – July 2021

- Created a popular Discord bot for programming platforms (DMOJ, Codeforces) with features for problem tracking, ratings, and contest updates.
- Adopted in over 800 servers as a centralized tool for competitive programming practice.

## TECHNICAL SKILLS

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**Languages:** Java, Python, C/C++, JavaScript, HTML/CSS, Bash,  $\text{\LaTeX}$

**Developer Tools:** Git, Google Cloud, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse

**Frameworks and Libraries:** JUnit, Bootstrap, React, Express.js, Node.js, MariaDB, NumPy, Matplotlib, PyTorch, Pygame

**Data Analysis and AI:** Pandas, Scikit-learn, TensorFlow, Keras