

# Ken Chen

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## EDUCATION

### University of Toronto

Toronto, ON

*Bachelor of Applied Science, Computer Engineering + PEY Co-op*

Sept. 2024 – May 2028

- Relevant Courses: Linear Algebra, Calculus I and II, Computer Fundamentals, Dynamics, Digital Systems, Programming Fundamentals, Software Design and Communication

## EXPERIENCE

### Software Engineer Intern

May 2025 – Aug. 2025

*TD Bank*

Toronto, ON

- Spearheaded the engineering of an internal-to-external asset mapping pipeline, accurately connecting 98% of 20,000+ asset pairings
- Programmed scalable Python scripts that scan 100,000+ company middleware assets for CID policy and security compliance, reducing manual analysis time by 70%.
- Deployed IP web crawler that identifies 99% of 5,000+ previously unknown assets, enabling seamless ingestion into ServiceNow for audit logging.

## PROJECTS

### Stocker - Stock Trading Simulator | *React, Node.js, Firebase*

Jun. 2025 – Aug. 2025

- Constructed a full-stack stock trading simulator that enables virtual portfolio management and trade execution
- Implemented data caching with in-memory structures to reduce redundant API calls and optimize performance
- Integrated a leaderboard system that ranks users by portfolio value using cloud functions and database triggers

### Spooky Spikes - 3D Obstacle Avoidance AI | *Python, Tensorflow, Keras*

May 2025 – Jun. 2025

- Trained a DQN agent to play a reflex-based game by learning to jump and duck over obstacles with 99% accuracy
- Optimized reward shaping, experience replay, and epsilon-greedy exploration for 100% training success
- Programmed 3D environment rendering pipeline and dashboard to visualize AI decisions, q-values, and confidence

### ModelShift - AI Response Comparison Tool | *React, Node.js, Crypto*

Dec. 2024 – Mar. 2025

- Devised a React/Node.js app for prompting multiple AI models simultaneously with encrypted API key storage
- Architected AES-256 encryption, layered rate limiting, and automated abuse detection to safeguard APIs
- Designed a responsive UI with exportable results, usage analytics, customizable chat options, and AI selection.

### Deadknight - Java RPG Game Engine | *Java Swing, Java AWT, JavaIO*

Apr. 2024 – May 2024

- Engineered a 2D Roguelike game in Java with 60 FPS, multithreaded rendering, real-time input, and animation
- Developed a sophisticated physics engine featuring convex hull collision detection using Separating Axis Theorem, binary search velocity resolution, and KD-Tree spatial partitioning for entity interactions
- Built a level design pipeline with a visual level editor, procedural level generation, and dynamic content loading

## AWARDS & CERTIFICATIONS

### AWS Certified Cloud Practitioner | *Amazon Web Services*

2025

- Acquired foundational AWS cloud services and architecture knowledge.

### Governor General Academic Medal | *Thornhill Secondary School*

2024

- Awarded to the student who achieves the highest grade average upon graduation from a secondary school

## TECHNICAL SKILLS

**Languages:** Java, Python, C/C++, JavaScript, TypeScript, Go, Ruby, HTML/CSS, SQL

**Developer Tools:** Git, AWS, Azure, VS Code, PyCharm, IntelliJ, Eclipse, CLion, Arduino, MATLAB, Qualys, Jira, ServiceNow, Firebase, MongoDB, Docker, Kubernetes, Ansible, Postman, Linux, Unix

**Libraries:** Flare, NumPy, JavaSwing, JavaFX, Pygame, Selenium, Pandas, Tensorflow, Node.js, React