

# YONGKANG CHENG

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## EDUCATION

**University of Toronto (St. George Campus), Toronto, ON** Sep 2023 - May 2028 (expected)  
Bachelor of Applied Science in Computer Engineering + PEY Co-op  
GPA: 3.92/4.0 (Top 30 among first-year ECE students)  
Relevant Courses: Applied Fundamentals of Deep Learning, Software Design and Communication

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## TECHNICAL SKILLS

- **Programming:** Python, C/C++, JavaScript/TypeScript, Verilog, Java
  - **Frameworks:** PyTorch, React, FastAPI
  - **Tools:** Linux, SQL/NoSQL, Nginx, Docker, Git, SSH
  - **Hardware:** Arduino, Raspberry Pi, FPGA
  - **Data and Visualization:** NumPy, Pandas, Matplotlib
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## EXPERIENCE

- Frontend Manager, Voluntrack.org (Non-Profit)** May 2024 - Present
- Coordinated a 4-person frontend team using React.js to renew the web interface.
  - Conducted biweekly stand-ups, assigned tasks in GitHub Projects, and streamlined communication in the team.
  - Improved user engagement by approximately 20% through enhanced app layouts and intuitive user flows.
- Project Lead, Handwritten Text Recognition (UofT)** Jun 2024 - Aug 2024
- Led a 4-member team to develop a PyTorch-based CRNN model for handwritten text recognition.
  - Deployed connected-pixel algorithms for image segmentation, processing 1024×1024 images in < 4 seconds.
  - Achieved 87% word-level and 95% character-level accuracy, reducing manual transcription time by 90%.
- Project Manager, Wellness Room Expansion (UofT)** Jan 2024 - Apr 2024
- Oversaw a 6-student team to improve a university wellness room; final presentation scored 82/100.
  - Managed tasks and dependencies using Gantt charts, completing 100+ items on schedule.
  - Leveraged 3D modeling in Blender to visualize proposals, simplifying client feedback and approvals.
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## PROJECTS

- Diary with AI Feedback** Sep 2023 – Present
- Designed and implemented a journaling program integrated with OpenAI's GPT API, generating insightful feedback and suggestions for over 570 diary entries.
  - Developed a diary sorting algorithm to retrieve contextually similar past entries, enhancing user experience and maintaining API costs below \$0.2 per call.
  - Optimized data-sorting pipelines and API request processes, reducing average diary load time from 10s to 0.5s, enabling seamless daily use.
- Verilog Pac-Man Game (UofT)** Nov 2024
- Created a Pac-Man-style FPGA game on a custom Verilog framework supporting VGA output at 60 FPS.
  - Debugged signal synchronization issues and state-machine logic, boosting overall stability and playability.
  - Automated sprite conversion using Python + OpenCV for seamless integration of game graphics.
- WillPower | Time Management & Monitoring** Jan 2025 - Present
- Built a modular system with Raspberry Pi capturing images and sending them to a Windows host for local storage and analysis.
  - Deployed Nginx, FastAPI, and libcurl for data transfer, facilitating real-time user monitoring and minimal downtime.
  - Currently exploring Azure Face APIs and transfer learning for user-behavior analysis on a dataset of over 20,000 images.
- Self-Clone Chatbot with Diary Database** Oct 2024 - Present
- Built a self-hosted AI-powered chatbot that replicates personal interaction styles, deployed using React.js,

FastAPI, and Nginx on a Raspberry Pi.

- Integrated OpenAI API and a vector-search NoSQL database for real-time Q&A functionality with personal diary data.
- Ensured secure and seamless remote access by implementing TLS encryption, DDNS, and optimizing for daily traffic from personal networks.

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#### **RainBirthdayGift – AI-Driven Chatbot**

Dec 2024

- Built a GPT-4-powered chatbot in 3 days using .NET WPF framework as a gift for a friend.
- Integrated OpenAI API to enable real-time conversations, designed with a dynamic interface.
- Enhanced experience by customizing UI with role-based colors and responsive message display.
- Implemented efficient asynchronous API calls using data binding with `INotifyPropertyChanged`.

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## **AWARDS & ACCOMPLISHMENTS**

#### **ECE Awards & Dean's List Scholar (UofT)**

Sep 2024

- Recognized for outstanding academic performance (GPA 3.92/4.0).

#### **American Computer Science League (ACSL) - Bronze Prize**

Jan 2021

- Placed in top 10% overall, with top-20% scores in the 4th round, after 60 hours of training.