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

TECHNICAL SKILLS

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

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.

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.

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`.

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.