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, LTSpice, Quartus, ModelSim
- **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.
- Utilized Figma for UI design and MS Project to keep track of tasks and deadlines.

Project Lead, Handwritten Text Recognition (University of Toronto) Jun 2024 - Aug 2024
- Led a remote team to develop a PyTorch-based CRNN model for handwritten text recognition.
- Achieved 87% word-level and 95% character-level accuracy on the test set with 10,000+ samples.
- Deployed connected-pixel algorithms for word positioning and word segmentation, processing 1024×1024 images in less than 4 seconds.

PROJECTS

Diary with AI Feedback Sep 2023 – On Going
- 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 (University of Toronto) Nov 2024
- Created a Pac-Man-style FPGA game using Verilog supporting PS/2 keyboard input and VGA output.
- Debugged signal synchronization issues and state-machine logic, boosting overall stability and playability.
- Automated image conversion using Python + OpenCV for seamless integration of game graphics.
- Prototyped the game using Pygame, ensuring accurate emulation of the FPGA version for agile development.

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 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.

AWARDS & ACCOMPLISHMENTS

ECE Awards & Dean's List Scholar (UofT) Sep 2024
- Recognized for outstanding academic performance (GPA 3.92/4.0).