Ethan Kang

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EDUCATION

McMaster University   **Sep 2021 - Dec 2026**
Software Automation Engineering, Co-op   Hamilton, ON

EXPERIENCE

Unrepped   **May 2025 - Present**
Software Engineer   New York, NY
- Led development of an AI-driven agent that streamlines mortgage application entry by simulating human browser behavior using **Playwright** and **Browserbase**, with deterministic flows managed through **Stagehand**.
- Spearheaded the development of an AI-powered chatbot capable of querying a **Supabase** database using **MCP**s to retrieve insights from user-submitted mortgage documents.
- Built a Reddit data pipeline targeting r/FirstTimeHomeBuyer, automating daily scraping and ingestion of real-world mortgage experiences with GitHub Actions and **cron** jobs.

RuskCast   **May 2024 - Aug 2024**
Junior Engineer Intern   Thorold, ON
- Boosted website load speed and usability by ~20% through front-end optimization using **HTML** and **CSS**
- Improved casting model manufacturability by 15% by redesigning 3D parts in **Fusion360**, reducing material waste and machining complexity
- Streamlined reverse engineering processes using **Geomagic Design X**, improving digital reconstruction accuracy and cutting rework time by 25%

PROJECTS

Simulated Factory Automation System
- Developed a **Node.js** + **Express** backend with configurable rule engine mimicking input/output control
- Built a Node.js backend with a configurable rule engine and REST API to simulate sensor/motor behavior
- Designed a live dashboard using **React** (Next.js) and **Tailwind CSS** with polling-based device state updates
- Enabled rule execution based on input conditions, timed delays, and virtual sensor toggling
- Structured the project with modular frontend/backend folders for maintainability and future feature expansion

Study Planner & Deadline Tracker
- Developed a full-stack task management web app to help students track assignments, quizzes, and exams
- Implemented inline editing, dynamic filtering, and overdue task detection for improved user experience
- Utilized **Mustache.js** templating to render task lists dynamically based on user input and filters
- Built RESTful routes with **Express.js** and persisted data using **SQLite** for efficient backend management
- Designed a mobile-responsive UI using Bootstrap to ensure cross-device usability and accessibility

Stop Light Control System | PLC
- Developed ladder logic to handle light transitions (red, yellow, green) with accurate timing for realistic traffic management.
- Implemented subroutines for each light stage, enabling modular control and easy modification.
- Linked **PLC** to **SCADA** system to enable real-time data collection and remote-control capabilities.
- Designed an intuitive **HMI** interface, displaying traffic light status and control options.

SKILLS

Languages: C++, HTML, CSS, JavaScript, Python, SQLite, MATLABS,

Frameworks & Libraries: React, React Native, Next.js, Node.js, Express.js, jQuery, Mustache.js, AJAX, LangChain

CAD: SolidWorks, Fusion360, AutoCAD, Revit, Geomagic Design X, CATIA,

Tools & Platforms Playwright, Browserbase, Stagehand, Supabase, GitHub Actions, UML, Cisco IOS, Excel