

Gurmannaat Oberoi

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EDUCATION

York University

Honours Bachelor of Science in Computer Science, GPA: 3.8/4.0

Courses: Software Design, Data Structures and Algorithms, Operating Systems, Database Fundamentals

Toronto, ON

Expected 2027

PROJECTS

In-Browser Operating System Simulator | Svelte, TypeScript, Tailwind, Vite, Local Storage API

- Developed an advanced browser-based OS simulation featuring interactive desktop management, draggable and resizable windows, and realistic task handling through state-driven UI components
- Engineered a recursive, in-memory filesystem integrated with browser Local Storage for persistence, supporting complex file operations including hierarchical navigation, file manipulation, and metadata management
- Implemented a fully-functional terminal emulator capable of processing simulated Unix-like commands, featuring dynamic command parsing, execution logic, and efficient state management
- Built modular applications such as a fully interactive Minesweeper game, Image Viewer, and text editor (Notepad), each showcasing sophisticated state management, reactivity patterns, and responsive UI design principles

Chatterly – Real-Time Chat Application | React.js, Node.js, Express.js, MongoDB, Socket.io

- Developed a MERN-stack chat platform with JWT authentication and secure API routes, ensuring robust user security
- Implemented real-time bidirectional messaging using Socket.io, supporting private rooms, typing indicators, and join/leave notifications for seamless user interaction
- Optimized MongoDB with custom schemas, indexing, and pagination, reducing message retrieval latency by 20% and ensuring scalable chat history storage
- Designed a responsive React UI with dynamic message auto-scrolling, connection retry logic, and Redux for state management, enhancing user experience across devices

Automated Image Compression and Cropping Utility | Python, Pillow (PIL)

- Built a Python-based tool to automate image compression and cropping across nested directories, generating multiple optimized resolutions for web use
- Enabled custom square-cropping positions via filename flags, allowing precise framing without manual editing
- Used Pillow to implement aspect-ratio resizing, sharpening, and lazy-load variants, streamlining large-scale media processing workflows

EXPERIENCE

Inventory Control Coordinator

Select Food Products

Jan 2024 – Present

Toronto, ON

- Built Python scripts to generate Excel-based inventory reports, improving tracking for high-volume production
- Maintained Excel-based KPI trackers for inventory accuracy and cycle-count compliance, enabling quicker issue identification and corrective actions
- Automated Python reconciliation of physical counts vs. ERP data, reducing errors by 45% and speeding report generation
- Collaborated with production teams to implement process improvements, translating operational needs into technical solutions

Tutor

York University

Jan 2024 – Sep 2024

Toronto, ON

- Mentored 50+ students to excel in Calculus 1 and Discrete Math using personalized strategies
- Led weekly problem-solving workshops with custom worksheets, fostering peer learning and boosting class performance
- Conducted pre-exam sessions on key concepts and problem-solving, improving 80% of students' grades by one letter grade

TECHNICAL SKILLS

Languages: Java, Python, C, SQL, Bash, Typescript, JavaScript, HTML, CSS

Technologies: Node.js, React, GraphQL, MongoDB, Tailwind, Docker, Git

Frameworks: Svelte, Express.js, MySQL