**Syed Kaab Surkhi**

Bachelor of Computer Engineering

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**EDUCATIONBachelor of Engineering (B.Eng), Computer Engineering,** Toronto Metropolitan University *2023 - 2027* **Relevant Courses:** COE 318 - Software Systems | COE 428 - Engineering Algorithms and Data Structures | COE 528 - Object Oriented Eng Analysis and Design | ELE 404 - Electronic Circuits I | COE 328 - Digital Systems

**TECHNICAL SKILLS**

**Programming Skills:** Python, C++, C, C#, MATLAB, Java, MySQL

**Frameworks:** Flask, Node.js, React.js, Tailwind CSS, OpenCV, Websocket, Golang, CLI Tools, PyGTK, Ros2, TCP Connections, Streamlit

**Tools:** CAD, 3D Printing, Electric Circuits, Git, Firebase, Arduino, NI Multisim, Quartus, NetBeans, Unity, JavaFX, Supabase, Vector DB

**WORK EXPERIENCE**

**Software Developer, Toronto MetRobotics**

• Implemented a control program for a Robotics Rover, enabling simultaneous component management.

• Developed a GUI for a multi-camera system using PyGST and TCP Connections.

• Incorporated dual production pipelines for efficient streaming.

**Full Stack Developer, Momentum AI**

• Developed an AI full stack study application with features such as flashcards and exam generators.

• Implemented application functionalities using a Flask backend and React.js frontend.

• Integrated databases for data management within the application.

**Network Programming Controls and Web Developer, Metropolitan Hyperloop**

• Developed a promotional website using React.js and Tailwind CSS.

• Built a GUI to display significant readout data from a RaspberryPi via TCP Connection.

• Designed a multi-tier sponsorship benefit system for the organization.

TECHNICAL PROJECTS

**BetEd**

• Implemented Retrieval Augmented Generation (RAG) for training an AI model.

• Leveraged Snowflake database, Mistral LLM, and Cortex Search for AI model development.

• Developed a networking platform for tech seekers, incorporating AI tutoring and professional feedback.

**BookCartFX**

• Developed a JavaFX bookstore application with secure user authentication.

• Implemented real-time book management functionalities and collaborated on system architecture.

• Utilized UML modeling and design patterns to ensure application scalability.

**Simple-Central-Processing-Unit**

• Created a multi-functional CPU in a VHDL environment deployed on an FPGA board.

• Implemented various functionalities using FSM state machines, latches, and decoders.

• Utilized arithmetic and logic units (ALU cores) and simulated the CPU using block schematics.