**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**

**Full Stack Developer, Momentum AI** — May 2025 – Ongoing

• Developed and implemented a full-stack AI study application featuring a flashcards generator, study planner, exam generator, and a RAG-trained study assistant.

• Designed and built the complete application functionality using a Flask backend, a minimal React.js frontend, and integrated databases for data persistence.

• Collaborated effectively with a team of developers in a fast-paced startup environment to deliver a functional and user-friendly application within project deadlines.

**Network Programming Controls and Web Developer, Metropolitan Hyperloop** — Sep 2024 – Ongoing

• Developed a promotional website using React.js and Tailwind CSS, collaborating with marketing teams to define requirements and ensure alignment with branding guidelines.

• Designed and implemented a multi-tier sponsorship benefit system, ensuring scalability and ease of management for various sponsorship levels.

• Built a GUI to display critical real-time data from a hyperloop pod, establishing a TCP connection between the GUI and a central Raspberry Pi to facilitate seamless data transmission.

**Software Developer, Toronto MetRobotics** — Oct 2024 – Ongoing

• Implemented a control program for a robotics rover, enabling simultaneous management of multiple components via a game controller, enhancing operational efficiency.

• Developed a GUI for a multi-camera system on the rover using PyGST, leveraging TCP connections for data streaming and CLI tools for comprehensive testing.

• Implemented dual production pipelines employing distinct methods to optimize for speed and smooth streaming, addressing diverse application needs.

**TECHNICAL PROJECTS**

**BetEd** *| Python, Retrieval-Augmented-Generation, Snowflake, Mistral LLM, Cortex Search, Streamlit, JavaScript, Full Stack, AI Model Training, Database*

• Developed a full-stack networking platform using Streamlit, Python, and JavaScript, enabling tech seekers to collaborate on challenging competitions.

• Implemented Retrieval Augmented Generation (RAG) leveraging Snowflake database for documentation storage, Mistral LLM for generation, and Cortex Search for retrieval, enhancing AI model training efficiency.

• Designed and implemented the platform's architecture, ensuring scalability and efficient knowledge retrieval for the AI tutor.

**ExploreWorld Unity** *| Unity, C#, Game Development, Physics Engine, 3D Modeling, Game Design, Simulation*

• Developed a solo exploration game in Unity using C#, focusing on realistic physics simulations involving gravity, acceleration, mass, and forces.

• Implemented control mechanisms for two vehicles with distinct physics properties, creating a challenging and engaging gameplay experience.

• Designed and integrated over six skyboxes and complex terrain, enhancing the game's visual appeal and immersion.

**DinoNFT** *| JavaScript, p5.js, Web3, Blockchain, Game Development, Smart Contracts, Token Integration*

• Developed a Web3 competitive game using JavaScript and p5.js within a 48-hour time constraint, achieving 3rd place in a Web3 category.

• Implemented a reward system that seamlessly integrated blockchain wallet connections, transferring tokens based on player scores.

• Designed and implemented game mechanics and user interface, creating an engaging and rewarding competitive gaming experience.