

# SAJAN SENGHERA

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## RE: NSERC USRA Undergraduate Research

Dear Selection Committee:

I am writing to express my interest in the NSERC USRA Award to pursue research in computing science under the supervision of one of the faculty members at Simon Fraser University. As a dedicated student at Simon Fraser University, I am particularly interested in applying the skills I've learned to pursue research in AI, hardware, and low level programming.

My academic foundation includes a GPA of 3.3/4.33, complemented by my SFU Undergraduate Scholars Entrance Scholarship with Distinction. My coursework has equipped me particularly well for research, including foundational Data Structures through CMPT 225, search algorithms and LLM models through CMPT 310, low level programming in C/Bash in Linux environments through CMPT 201, software practices through CMPT 276, and lastly statistical modeling through CMPT 210.

In addition to my coursework, I have undergone personal projects to gain real world experience. This includes Coursebot, a discord bot that leverages Python, AWS Lambda, and Google Generative AI to recommend and display SFU courses. To apply my knowledge of CMPT 225, I built a procedurally generated dungeon crawler using C#, Monogame, and DynamoDB that stores users' current data and implements dynamic level generation using A\* pathfinding and cellular automata. Lastly, I built a personal website with React.js, TypeScript, and CI/CD pipelines in CMPT 276 to prove software development and learn how to develop with a modern tech stack.

As a STEAM & Coding Instructor at Science Alive, I mentored over 100 students in programming and robotics, refining my ability to communicate technical concepts clearly- a critical skill in collaborating in research teams.

I am interested in contributing to projects of the nature of AI, machine learning, and low-level programming. The NSERC USRA would provide a valuable opportunity to deepen my expertise while contributing advancements in the field of Computing Science. Thank you for considering my application.

Sincerely,

Sajan Senghera