# Sarswat Aryan

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## EDUCATION

**GEORGIA INSTITUTE OF TECHNOLOGY** | Master of Science in Robotics
Aug 2023 - Current | Atlanta, USA

**NATIONAL UNIVERSITY OF SINGAPORE** | Bachelor of Computing in Computer Science (Honours)
| University Scholar Programme (Senior Honour Roll)

## EXPERIENCE

**AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH (A*STAR)** | Research Attachment
Aug 2022 – July 2023 | Singapore
Conducted extensive research to develop pioneering models for detecting deepfakes, culminating in an end-to-end system capable of detecting deepfakes from videos. Additionally, established an efficient pipeline for video processing while working with datasets as large as 1TB.

**NATIONAL UNIVERSITY OF SINGAPORE** | CS3244 (Machine Learning) Teaching Assistant
Aug 2022 – Dec 2022 | Singapore
Served as an instructor for a weekly Machine Learning course, providing instruction to a class of 15 students on diverse topics in this field. Mentored three project groups throughout their final group projects, providing guidance and support as needed. Contributed to course development by designing and grading assignments, exams, and final projects.

**MINISTRY OF COMMUNICATION AND INFORMATION** | Technology Intern
May 2022 – Aug 2022 | Singapore
Collaborated with my supervisor to develop a blockchain-based prototype aimed at ensuring the authenticity and origin of online content. This project involved acquiring proficiency in new frameworks, including React and Node.js. In addition, I conducted an extensive literature review on deepfakes and researched techniques for enhancing the generalization capabilities of deepfake detection. Subsequently, I transformed this project into my final year project.

## ACTIVITIES AND PROJECTS

**LANE-FOLLOWING FOR AUTONOMOUS DRIVING** | Team Leader
Jan 2023 - May 2023
Designed a computer vision algorithm to enable automated lane following, leveraging expertise in ROS and implementing diverse path-finding algorithms. The project involved a high degree of technical proficiency in computer vision and robotics, and required close attention to detail to ensure successful implementation.

**AMERICAN SIGN LANGUAGE DETECTION** | Team Leader
Aug 2022 - Dec 2022
Acquired expertise in training Convolutional Neural Networks using Tensorflow to achieve exceptional performance in American Sign Language detection. Designed and implemented a real-time processing pipeline for sign language classification, demonstrating proficiency in working with Arduino sensors and low-compute environments.

**REINFORCEMENT LEARNING PROJECTS** | Team Member
Dec 2020 – May 2021
Conducted extensive research on various algorithms, such as Alpha-Zero, in order to devise an innovative AI system capable of mastering the game of Santorini. Additionally, I explored alternative methods for adapting the Alpha-Zero algorithm to optimize its learning capabilities for game mastery. Through this process, I gained a proficient understanding of machine learning frameworks, including PyTorch and scikit-learn.

## ADDITIONAL INFORMATION

**PROGRAMMING**
Over 5000 lines:
• Python • Java • C++ • LaTeX
Deep Learning
• PyTorch • TensorFlow • Keras

**SPOKEN & WRITTEN**
Native fluency:
English
Reading fluency:
French, Hindi