**Balreen Kaur**  
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**Career Objective**

Driven and analytical Data Science and Artificial Intelligence student with strong foundations in mathematics, statistical modeling, and machine learning. Proficient in building real-world AI solutions through innovative approaches and practical applications. Seeking an opportunity in AI and Data Analytics to leverage technical skills and enhance organizational outcomes.

**Education**

Bachelor of Computer Science  
Griffith University, Gold Coast  
Major: Data Science & Artificial Intelligence  
Expected Completion: November 2025

**Projects & Experience**

**Real-Time Sign Language Recognition System (***Python, OpenCV, TensorFlow, Mediapipe***)**

* Designed and implemented a real-time gesture recognition system capable of identifying digits and alphabets.
* Enhanced model accuracy by 25% through Mediapipe-based landmark detection and image preprocessing.
* Trained and optimized CNN models using TensorFlow/Keras for efficient real-time predictions.

**AI-Powered Pacman Simulation (***Python, ROS, Gazebo, AI Pathfinding***)**

* Developed AI agents in a multi-agent ROS environment to simulate intelligent Pacman behavior.
* Implemented advanced pathfinding algorithms (A\*, Minimax) for strategic movement and obstacle avoidance.
* Collaborated on Gazebo-based simulations with sensor integration and testing frameworks.

**Uniform Sales Web Application (***Django, Python, HTML/CSS***)**

* Built a full-stack web application to streamline school uniform sales and inventory tracking.
* Designed scalable backend models for inventory, students, and transaction history.
* Developed intuitive frontend with real-time receipt generation and reporting tools.

**AI Emotion Feedback Kiosk System (***Python, OpenCV, ResMaskNet, Streamlit***)**

* Engineered a real-time emotion detection kiosk using facial expressions and voice tone analysis.
* Integrated ResMaskNet for facial emotion recognition; laid groundwork for voice emotion integration.
* Built backend workflows and displayed interactive emotion scores (e.g., “96% happy”) with persistent data storage.

**Voice & Facial Emotion Analysis Research (***Ongoing – Team Project***)**

* Collaborating on a culturally inclusive model analyzing classroom emotion feedback from children aged 10–16.
* Using webcam and mic input to build facial/vocal emotion recognition pipelines.
* Leveraging Python, PyTorch, and Mediapipe for lightweight and responsive system architecture.

**Technical Skills**

* Programming Languages: Python, C++, SQL, HTML/CSS
* Machine Learning & AI: TensorFlow, Keras, Scikit-learn, Mediapipe
* Data Analysis & Visualization: Pandas, NumPy, Matplotlib, Seaborn
* Tools & Frameworks: Git, ROS, OpenCV, Jupyter Notebook, Docker, Streamlit
* Cloud Platforms: Basic AWS knowledge