# Adit Dua

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## Education

**Wilfrid Laurier University** — Waterloo, ON
*Honours Bachelor of Science in Computer Science, Co-op Program* — *Sep. 2023 – July 2027*

- First Year GPA: 10.80/12.00
- Received $1250 in-course scholarship for maintaining the GPA over 10.50
- Faculty of Science: Dean's Honour Roll 2023-24

**Pathways School Gurgaon - International Baccalaureate** — Gurgaon, India
*Math AA(HL), Physics(HL), Chemisrty(HL), Business(SL), English A(SL), Spanish B(SL)* — *April 2013 – May 2023*

## Technical Skills

**Languages**: Python, JavaScript, HTML & CSS, Java, C
**Developer Tools**: Git, Google Collab, VS Code, PyCharm, Eclipse, runQL
**Libraries**: Matplotlib, PyQt, Tensorflow, Pandas, Numpy, Mediapipe, PyTorch, OpenCV, SVM, Clustering, Regression, Classification, Scikit-learn, Seaborn, Pipenv, Keras, SciPy, Plotly, YOLO, XGBoost, SciPy

## Experience

**Research and Development Intern** — May 2024 – August 2024
*Logic Fruit Technologies* — *Gurgaon, India*

- Developed ADAS programs that improved vehicle safety and enhanced driver assistance features by utilizing algorithm development and sensor integration.
- Built algorithms for object and lane detection, collision avoidance, and traffic signal detection that optimized vehicle automation and enabled real-time decision-making using advanced programming and computer vision techniques.
- Implemented 2D/3D face recognition/detection that provided secure user authentication and improved system security by leveraging TFLite and machine learning frameworks.
- Integrated sensors like cameras and LiDAR that supported collision detection and adaptive lighting by applying real-time data processing and sensor fusion.

**Intern** — May 2022 – June 2022
*StigaSoft* — *Gurgaon, India*

- Optimized HTML structures in PoshanTracker to improve user interface and experience using HTML & CSS coding skills.
- Enhanced platform interactivity and responsiveness in PoshanTracker with dynamic functionalities through JavaScript development.
- Worked with cross-functional teams in PoshanTracker to align design elements with project goals, fostering collaborative teamwork.
- Resolved coding challenges in PoshanTracker, ensuring smooth project execution through effective problem-solving.

## Projects

**2D & 3D Face Recognition** | *Python, PyQt5, TFLite, Mediapipe, OpenCV*, AI /ML — July 2024 – Sep. 2024

- Used a webcam for real-time facial analysis to provide both 3D face detection (leveraging depth information) and 2D face recognition (based on image data) by utilizing camera integration and computer vision techniques.
- Allowed users to capture multiple images of their face from different angles to enhance the system's accuracy and adaptability for future face recognition tasks by using image capture and storage functionalities.
- Built an intuitive GUI with PyQt5 to enable users to switch between 3D detection and 2D recognition modes, and easily capture and save images by applying PyQt5 for interface design and user interaction.

**Lane Detection** | *Python, JSON, OpenCV, AI /ML Libraries* — May 2024 – July 2024

- Developed a lane detection system to identify road lanes in real time by using polynomial fitting and perspective transformation, providing visual overlays and warnings for lane deviation.
- Designed a system to overlay real-time information on the display by using JSON for data handling and OpenCV for visual feedback, including curvature direction, lane status, and vehicle offset during driving.
- Implemented algorithms to calculate road curvature and determine vehicle's position relative to the lane center by utilizing computer vision and geometry, enhancing lane detection assistance by alerting the driver of off-center drift.