

# Mayank Tyagi

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## EDUCATION

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### Thapar Institute of Engineering and Technology

*Bachelor of Engineering in Computer Science*

Punjab, India

4th Year, CGPA - 9.38

### Modern Vidya Niketan

10+2

Faridabad, Haryana

Percentage - 95.2

## EXPERIENCE

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### Software Developer Engineering Intern

*Expedia Group*

June 2025 – July 2025

*Gurgaon, India*

- Automated booking verification workflows (3P Non-3P) using Python, SQL, and Jenkins, saving over 800+ engineering hours/year by eliminating manual tasks across OMS and internal systems.
- Built scalable data-processing pipelines to query APIs and databases, generate structured outputs (Excel/Email), and ensure consistent stakeholder communication.
- Investigated and resolved ingestion failures in a vendor integration pipeline (GYG), identifying critical data misconfigurations and improving system reliability.

## PROJECTS

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### Gryffin Guard | *Python, HTML/CSS, Flask, YOLO, OpenCV*

- Built a Flask-based web application to process video uploads and live camera feeds, using machine learning algorithms for automatic license plate recognition and logging vehicle in/out times to a PostgreSQL database.
- Integrated custom helper modules for video processing and database operations, enabling seamless coordination between frontend interfaces and backend ML-driven recognition pipeline.

### ESRGAN Tiny Faces Super-Resolution | *Python, PyTorch, OpenCV*

- Developed and fine-tuned an Enhanced Super-Resolution GAN (ESRGAN) pipeline specifically optimized for recovering high-quality images of tiny, low-resolution human faces from noisy inputs.
- Utilized paired low-res and high-res face datasets for supervised training, incorporating perceptual loss and adversarial learning to maintain facial identity while enhancing details.
- Improved reconstruction performance on tiny face benchmarks by leveraging residual-in-residual dense blocks and relativistic average GAN loss functions.
- Designed the system to be adaptable for broader applications such as generating high-resolution satellite imagery from dual low-resolution inputs offset by subpixel shifts.

### RoboCar | *C, X-CTU, Eagle*

- Engineered and integrated three specialized circuits: A distance detection circuit for gantry proximity, a path-following circuit based on infrared intensity, and a frequency control circuit for gantry operations.
- Developed collision avoidance system using ultrasonic sensors to ensure safe navigation and prevent accidents.
- Programmed autonomous navigation and parking: Implemented code to keep the buggy on the path using data from the infrared circuit and ensured it parks after completing the required laps.
- Established wireless communication using XBee modules for real-time data exchange between the computer and the buggy, enhancing control and monitoring capabilities.

## TECHNICAL SKILLS

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**Languages:** Python, C/C++, Java, Scala, SQL (Oracle), MySQL, JavaScript, HTML/CSS, R

**Developer Tools:** Git, VS Code, PyCharm, IntelliJ, Unity Engine, Jenkins, Docker, AWS, Swagger, Splunk

**Libraries/Frameworks:** pandas, NumPy, Matplotlib, pygame, scikit-learn, PyTorch, Nodejs

## ACHIEVEMENTS

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- Won the Internal Hackathon at the college level, represented the college in the Smart India Hackathon.
- Gold medalist in Britannica Quiz.
- First runner up in Inter-Patiala FIFA Tournament.