Manas Agrawal

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Objective

Motivated and detail-oriented computer science student seeking opportunities to apply strong Java, Python, and problem-solving skills in real-world projects while gaining hands-on experience in software development.

Education

- **York University** Toronto, Ontario
- *Bachelor of Science in Computer Science (Honours)* Expected Graduation: May 2027
- **Relevant Coursework:** Data Structures, Advanced Object-Oriented Programming in Java

Technical Skills

- **Languages:** Java, Python, C, SQL, JavaScript, Bash, Matlab.
- **Frontend:** React, HTML5, CSS
- **Systems & Concepts:** Data Structures, Algorithms, Object-Orientated Programming
- **Developer Tools:** Git, Linux Environment, Power BI.
- **AI/Data Tools:** Pandas, NumPy, PyTorch.

Experience

- **Research Assistant** — York University May 2025 - Present
  - Designed and implemented machine learning and deep learning models for blockage prediction using multimodal data, **Vision Transformers, CNNs, and GRUs.**
  - Built a complete research pipeline including data preprocessing, model training, testing, and evaluation.
  - Collaborated with the professor on refining methodology and analyzing results.
- **Exam & Space Monitor** — York University Oct 2024 - Present
  - Provided invigilation, monitoring, and administrative support for exams, ensuring effective implementation of accommodations for students with accessibility needs.
  - Monitored exams in the Exam Centre, while addressing incidents to uphold academic integrity standards.
  - Responded to and reported academic integrity issues, for a fair and secure examination environment.

Projects

- **Deep Learning for LoS Blockage Prediction in 6G Networks — ViT, CNN & GRU**
  - Implementing a hybrid deep learning model to predict Line-of-Sight (LoS) blockages in 6G vehicular networks using multimodal data (images and beamforming vectors).
  - Engineered features from raw sensor data and implemented custom tensor operations using **PyTorch**, improving model performance over baseline implementations.
- **Ray Tracer — Java, Object-Oriented Programming**
  - Designed and implemented a 3D ray tracer entirely from scratch, combining my interest in **Java**, graphics programming, and **OOP design** principles.
  - Experimented with rendering techniques such as lighting, shadows, and reflections to better understand how light interacts with objects in a 3D scene.
  - Built this project not just as a technical challenge but also as preparation for my next goal: simulating the extreme visual effects around a black hole.
- **Portfolio Website — HTML, CSS, JavaScript**
  - Designed and developed a personal portfolio website to showcase my projects and skills.
  - Built with a focus on clean design, responsiveness, and usability.
  - Serves as a hub for my work, including AI/ML research, Java projects, and document automation tools.