Jasjaap Dua

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Education

University of Toronto — Toronto, ON

Bachelor of Applied Science in Computer Engineering + PEY — *September 2020 - June 2026*

Intended Minor in Artificial Intelligence Engineering

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Introduction to Databases, Software Communication & Design, Introduction to Machine Learning, Computer Networks I, Digital Systems, Computer Organisation, Introduction to Control Systems

Skills

Programming Languages: C/C++, Java, Python, Javascript, SQL
Platforms & Tools: Git, PostgreSQL, Unix/Linux, GNU Debugger, NumPy, Sci-kit Learn, PyTorch, MATLAB, Django-REST Framework, Cypress
Technical: Agile Development, Scrum, Object Oriented Programming, Automated Testing, Debugging, Software Documentation

Experience

Project Trainee — Hyderabad, India

BayRock Labs — *September 2024 – August 2025*

- Led daily scrum meetings for a cross-functional team, **gathering updates, creating user stories, reporting bugs**, and **managing the scrum board**, which improved on-time task completion by **15%**.
- Developed 100+ automated test cases using **Cypress**, including a programmatic **AAD authentication** solution that reduced testing cycle time by 25%.
- Analyzed and resolved backend issues in a **Python/Django REST** environment and **implemented CRUD APIs** for 3 key modules, **boosting system reliability by 30%**.
- Provided **real-time support** during software releases, assisting new users and documenting critical issues, leading to a **95%** issue resolution rate through detailed root cause analyses.

GIS Application Team Technical Lead — University of Toronto, ON

Software Communication & Design — *January 2023 – April 2023*

- Led a team as **Technical Lead** to design and implement a Geographic Information System in **C++** using the **OpenStreetMap Database**.
- Conducted **unit and integration testing** using given and custom test suites, employing the **GNU Debugger** to ensure application stability and robustness.
- Built an accessibility-friendly and responsive GUI using Glade, GTK and EZGL. Included displaying natural features, buildings and important landmarks, reducing input lag to **20 milliseconds**.
- Applied efficient pathfinding algorithms **(Dijkstra and A*)**, computing legal routes and written instructions in **under 40 milliseconds**.

Terasic DE1-SoC Platforming Game Developer — University of Toronto, ON

Computer Organisation — *January 2023 – April 2023*

- Collaborated in a two-person team, ensuring effective communication and dividing tasks to successfully create an **ARM-A9 FPGA** version of the platforming game Celeste (PICO-8).
- Automated the conversion of **ImageMagick** files to C-arrays, enabling efficient buffering of sprites onto the **VGA display**, optimising graphical performance.
- Integrated support for **PS/2 keyboard** and on-board FPGA buttons using **polling** and **interrupt** methods to control the in-game sprite, ensuring smooth user input and interaction.
- Engineered robust in-game collision detection and handling for walls and obstacles, achieving seamless sprite respawns upon in-game death to maintain continuous gameplay.