# Piyush Razdan

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## Education

**University of Toronto** Expected Aug 2024
*Honours Bachelor of Science in Computer Science and Geographical Information Systems* *Toronto, ON*

## Experience

**Software Developer Intern** May 2022 – Aug 2023
*Environment and Climate Change Canada - CSFB/ASA/Monitoring Division* *North York, ON*

- Automated **Azure DevOps** project creation using **Python** and **REST APIs**, utilizing **GET** requests to retrieve user info, **POST** requests to add users, and identifier extraction from PDFs with **JSON** response handling.
- Overhauled Azure **CI/CD** workflows to achieve efficient and reliable project repository backups by configuring **YAML**-based backups to **Azure Blob Storage** and automating weekly backup processes.
- Used **Postman** for API integration testing, ensuring a robust **QA** process by detecting and resolving API issues while identifying **SDK** errors during **pre-production** deployment.
- Built a **Tk GUI** for project decommissioning, automating deletion and minimizing manual efforts, using user **auth** keys and personal access **tokens** to manage the bottom-to-top removal of inactive projects.

**Geospatial Research Analyst** Aug 2023 – Dec 2023
*University of Toronto Mississauga - Dept. of Geography/Geomatics/Environment* *Mississauga, ON*

- Analyzed **CO2** concentration and **SRTM** elevation change for UofT Mississauga's Riverwood Conservancy soil respiration project using EGM-5 CO2 Gas Analyzer and Decagon GS-3 Probe.
- Geo-processed data with the carbon analyzer to reveal correlations between temperature, moisture, and soil respiration, performed **regression** analysis in **Python**, and created heat maps in **ArcGIS Pro**.
- Generated comparative **trend graphs** to illustrate the relationship between soil respiration and temperature across different elevations.

## Projects

**MiniQuest Portal** | *PHP, PostgreSQL, MVC, HTML5, CSS, SSH, VS Code* Jun 2024

- Created a PHP mini-games website with Guess Game, Rock Paper Scissors, and Frog Jumping Puzzle, utilizing **MVC** architecture, **PostgreSQL**, and **page tokens** for enhanced security and session control.
- Optimized website performance through **backend database** development, implementing a **relational schema** to reduce load times and data retrieval errors.

**Wordle Arena** | *React.js, Node, Express, Sockets, Fetch, jQuery, HTML, CSS, VS Code* Apr 2024

- Generated a word-centred multiplayer arena using **React** and **Web Sockets** for bi-directional communication, enabling users to compete in guessing a randomly generated word within a 60-second window.
- Implemented secure **cookie** usage to maintain user history and consistent identifiers across sessions.
- Executed test-driven development of all back-end APIs using **JUnit**, deployed the back-end on UofT's server, ensuring **robust** and **reliable performance**.

**UofT Purpose Platform** | *Next.js, Node, HTML, Tailwind CSS, Figma, Vercel, VS Code* Dec 2023

- Led a development team in **prototyping** a gratitude-focused platform for local charities and communities, using **Figma** for **UI/UX design** and collaboration.
- Collaboratively developed a charity-donor engagement platform with **automated chat** features and visual **statistics**, designed in **Next.js** and deployed on **Vercel**.
- Performed **usability** testing with random selection and enhanced financial **transparency** via quarterly reports.

**Three Musketeers AI Strategy** | *Java, JavaFX, JUnit, OOP, Agile, GitHub Actions, Eclipse* Dec 2021

- Developed an AI-driven board game in **Java** and **JavaFX** by implementing a **Greedy Agent** with the **minimax** algorithm and using **OOP** to ensure modular and maintainable code.
- Added 3+ creational **design patterns** and managed development with **Git** branches, using **agile** methodologies for iterative sprints and continuous integration, leading to consistent updates.

## Technical Skills

**Language(s)**: Python, Java, SQL, JavaScript, Bash, C, CSS, Go, Haskell, HTML5, PHP, R, Racket, TypeScript, X/YML
**Libraries/Frameworks**: Ajax, Django, Docker, jQuery, JUnit, Node, NumPy, Postgres, React, RESTful API, Terraform
**Platforms & Technologies**: AWS, Azure, Apache, ArcGIS, ETL, Figma, GCP, Git, Jenkins, Jira, Linux, Postman API