

Preet Atwal

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Summary

Computer Science graduate specialising in Digital Media & Games with experience developing 2D and 3D games using Unity and C#. Skilled in gameplay programming, AI, machine learning, full-stack development, Agile methodologies, and Git. Passionate about building engaging gameplay experiences and scalable software solutions.

Technical Skills

Languages: C#, Java, Python, JavaScript, SQL

Game Development: Unity, Gameplay Programming, AI, Physics, UI Systems, Unity Input System, Animation

Web Development: React, Spring Boot, REST APIs

Machine Learning: Random Forest, Flask, Scikit-learn

Tools: Git, GitHub, Unity Version Control, JetBrains Rider, Visual Studio Code, Eclipse

Methodologies: Agile, Object-Oriented Programming, Software Development Lifecycle (SDLC)

Education

Sept 2023 – June 2026	BSc (Hons) Computer Science (Digital Media and Games) , Brunel University London
Relevant modules:	Digital Media and Games, Software Engineering, Artificial Intelligence, Advanced Topics in Computer Science, Algorithms and their Applications, Software Development and Management
Final-Year Project:	Dynamic Difficulty Adjustment System for Battle Royale Games using Machine Learning

Technical Projects

Dynamic Difficulty Adjustment System for Battle Royale Games

- Developed a Unity game prototype featuring player movement, combat systems, enemy AI, and round-based gameplay mechanics
- Implemented a client-server architecture connecting Unity (C#) to a Python Flask API for real-time difficulty prediction and gameplay adaptation
- Trained and integrated a Random Forest machine learning model using PUBG player performance data to classify player skill levels
- Applied dynamic difficulty scaling by adjusting enemy behaviour, health, damage, spawn rates, and player assistance features based on predicted skill levels
- Used Git and Agile principles throughout iterative development and testing

Galactic-Leap

Ongoing personal project developing a modular 3D interplanetary exploration game featuring custom gravity, planetary traversal, and scalable gameplay systems:

- Programmed planet gravity fields and semi-realistic physics to allow players to traverse between planets and interact with orbiting systems
- Developed a dynamic planetary orbit system, including stationary and boss-orbiting planets, to create a constantly changing environment

- Developed a central “boss planet” with unique physics-based mechanics, allowing interaction with surrounding orbiting planets
- Created a modular construction system for player-built bases and outposts adaptable to unique planetary environments

2D Twin Stick Shooter

- Programmed player movement system using Unity’s new Input System for cross-platform support
- Designed UI menus, HUD elements, and health systems to enhance player experience
- Built a modular combat and weapons system, including damage handling, projectiles, and enemy AI with varied attack patterns
- Developed 3 complete levels featuring puzzles, combat encounters, and enemy AI
- Managed project versions using Unity Version Control and implemented a structured asset hierarchy for efficient handling of internal and external assets

Charitable Web Application

- Contributed to the ideation, design, and implementation of core features across front-end and back-end
- Developed dynamic user profiles and gamification logic using React, Axios, and Spring Boot (REST, Spring Security)
- Built a searchable charity listing page using in-memory databases for dynamic content rendering
- Collaborated in Agile sprints, applying Git workflows and peer code reviews to maintain high-quality code, reducing merge conflicts and improving team development efficiency

Traffic Lights in Java

- Programmed autonomous navigation and task execution using sensor data and control loops
- Designed and implemented algorithms to enable multiple robot behaviours based on project requirements
- Used GitHub for version control and collaborative development with team members

Employment History

Pret A Manger | Team Leader | June 2017 – September 2025

- Supervised and trained a team of 15–20 employees in a fast-paced customer environment
- Balanced full-time employment with university study, demonstrating strong organisation and time management

Additional Information

Interests: Game development, gaming, fitness and escape rooms