

# Sam Hageman

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## EDUCATION

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### University of Waterloo

*Bachelor of Mathematics - 3.9 GPA*

Waterloo, ON

*Sept. 2025 – Present*

## EXPERIENCE

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### Programming Teacher

*School District 43 - CLCI*

Sept. 2024 – Sept. 2025

*Vancouver, BC*

- Designed and delivered structured programming curricula (Unity, C#, JavaScript/TypeScript (MakeCode), Scratch) to classes of 20+ students
- Developed full-length interactive tutorials and visual learning tools to improve engagement and comprehension
- Adapted technical concepts into accessible formats for beginner to intermediate learners

### Programming and Design Teaching Assistant

*School District 43 - CLCI*

Feb. 2023 – Sept. 2024

*Vancouver, BC*

- Supported instruction for 300+ students across programming and design tools (Python, C#, Scratch, Figma, Adobe Suite)
- Collaborated with instructors to troubleshoot technical issues and guide students through projects
- Contributed 200+ volunteer hours assisting with lesson delivery and student support

## PROJECTS

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### Bluesky ML Labeling System | *Python, pandas, scikit-learn, Parquet, Bluesky API*

2026

- Built and deployed a data pipeline processing 400k+ posts via the Bluesky API, integrating predictions into a live labeling service
- Engineered behavioral and text-based features to classify AI vs human accounts using two models trained on distinct datasets (collected vs curated AI accounts)
- Trained and compared ML models (logistic regression, random forest), evaluating cross-dataset performance for robust classification

### Procedural RPG Environment System (Unity) | *Unity, C#, Procedural Generation*

2024-25

- Developed recursive cellular automata systems alongside unique UI assets to generate diverse 2D cave environments with dynamic terrain, lighting, and animation
- Designed a modular generation framework supporting randomized props, chest/loot systems, and rare structures governed by spatial constraints, enabling seamless transitions between overworld environments and dungeon scenes
- Built a ScriptableObject-driven inventory and UI system integrated with Unity's input and event systems for interactive item management

### WordStream — Real-Time Word Strategy Game (Web) | *Unity, C#, WebGL*

2026

- Engineered a browser-based word game featuring real-time scoring, dynamic tile systems, and custom rule mechanics
- Implemented optimized dictionary-backed validation with efficient lookup structures for fast word detection
- Designed responsive interaction and feedback systems with layered animation, visual cues, and polished UI for high-quality gameplay experience

## TECHNICAL SKILLS

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Languages Python, C#, C, JavaScript

Game Development Unity, WebGL, State Machines, Scriptable Objects, Advanced Tilemap Systems

Data Science & ML pandas, NumPy, scikit-learn, Data Pipelines, Feature Engineering

Tools & Technologies Git, Parquet, REST APIs, VS Code, Linux

Concepts Object-Oriented Design, Modular Systems, Algorithm Design