Songxuan Wu

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Education

University of Toronto — Toronto, ON
Bachelor of Science, Computer Science and Statistics — *Sep. 2024 – May. 2028*
- **Relevant Courses:** Foundations of CS, Statistics and Data Science, Linear Algebra, Calculus with Proofs

Woodstock Academy — Woodstock, CT
High School Diploma — *Jan. 2022 – Jun. 2024*
- **Awards:** AP Scholar with Distinction, Outstanding Math Student, Math Team MVP
- **Clubs:** Coding Club (Founder & President), Robotics Club (Captain), Math Team (Captain)

Projects

EmpowHer: Adventure Game | *JavaScript, HTML5, CSS* — Mar. 2025 – Mar. 2025
- Developed a 2D adventure game to **inspire and empower young girls** interested in **AI and STEM** fields.
- Designed **enemy AI behavior** using dynamic chasing logic based on player positioning for engaging gameplay.
- Implemented **6 interactive rooms** representing **real-world challenges for woman** in AI and STEM.
- Integrated 5 collectible power-up elements inspired by **prominent women in the field of AI**.

Statistical Analysis of Social Connection | *Python, Jupyter Notebook, Pandas, NumPy* — Oct. 2024 – Dec. 2024
- Conducted **exploratory data analysis** to identify patterns in social engagement and health outcomes.
- Performed **data cleaning** on **10000+** survey responses, normalizing data for validity.
- Built **3 predictive models** by **linear regression**, **hypothesis tests**, and **decision tree** to analyze correlations.
- Used **box plots**, **regression plots**, and **decision tree** diagrams to visualize data-driven conclusions.
- Interpreted that social connection is crucial for enhancing personal health, mental well-being, and life satisfaction.

Text Adventure Game | *Python, Teamwork* — Jan. 2025 – Feb. 2025
- Developed an interactive text-based game consisting of **10+ interactive scenarios**.
- Implemented **inventory** management, **scoring system**, and **3 puzzle-based progression**.
- Designed challenges including move-limited gameplay and score-dependent room access.

Space Shooter Game | *Python, Pygame, Object-Oriented Programming* — Dec. 2024 – Jan 2025
- Developed a **2D** space war game featuring **player-controlled movement**, **3 enemy waves**, and **laser combat**.
- Implemented **collision detection** using Pygame masks for accurate hit registration between lasers and ships.
- Designed **progressive difficulty scaling**, with increasing enemy waves, movement speed, and attack frequency.
- Optimized rendering with **blitting techniques** and efficient **game loop management** for higher frame rates.

Superstar Trivia Game | *Java, Object-Oriented Programming, GUI design* — Mar. 2023 – Apr. 2023
- Developed an interactive Java trivia game with GUI and category-based clues.
- Implemented **inheritance** and **polymorphism** for unique game characters and mechanics.
- Designed an intuitive **Java Swing interface** with interactive elements and timed gameplay.

Race Game | *Python, Pygame, Object-Oriented Programming* — May. 2022 – Jun. 2022
- Developed a 2D racing game with **player controls**, **AI opponent**, and **collision detection**.
- Implemented **path-following AI** and level-based **difficulty scaling** for dynamic gameplay.
- Optimized rendering with efficient **image transformations** and **blitting techniques**.

Extracurricular Learning

University of Connecticut — Storrs, CT
Pre-College Summer Program — *Jun. 2023 – Aug. 2023*
- Completed courses in **Animation Studio** and **Digital Animation & Motion Graphics**.
- Developed a **digital animation project** using industry-standard tools.

Skills

Programming & Libraries: Python, Java, JavaScript, CSS, HTML, Jupyter Notebook, Pygame, Pandas, NumPy
Software & Development: OOP, Full-Stack Development, GUI Design, Game Development
Creative & Design: Digital Animation, Graphic Design, UI/UX, Image Processing
Soft Skills: Data Analysis, Teamwork, Communication, Problem-Solving, Leadership