Songxuan Wu

songxuanwu6@gmail.com | github.com/JimmyWooHoo | www.linkedin.com/in/songxuan-wu

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

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 survey responses, handling missing values and normalizing data for validity.
- Applied **linear regression**, **hypothesis testing**, and **decision tree regression** to analyze correlations.
- Used **box plots**, **regression plots**, and **decision tree** diagrams to support data-driven conclusions.
- Interpreted that social connection and community engagement are 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 using Python and **object-oriented design**.
- Implemented **inventory** management, **scoring system**, and **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 shooter game** featuring **player-controlled movement**, **enemy waves**, and **laser-based 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**.

Photo Editor | *Python, Pygame* — Sep. 2024 – Oct. 2024
- Developed a Python-based photo editor with grayscale, sepia, pixelation, and cropping **filters**.
- Optimized **pixel manipulation** using list comprehensions for efficient image processing.
- Utilized Pygame for interactive visualization of filter effects.

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, 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