

Sean Henry Lewis

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EDUCATION

Bachelor of Science, Mathematics, Certificate in Computing

University of Texas at Austin

May 2025 (Expected)

WORK EXPERIENCE

University of Texas at Austin - Austin, Texas

August 2022 - Present

Good Systems SmartCity Researcher

- Built full-stack interfaces and applications for the Urban Information Lab
- Solo lead and developer of several research projects (ex. OpenCityAI, SmartCityData, etc.)
- Innovated urban informatic solutions with the forefront of technology: AI, ML, NLP

Aspen Games - Austin, Texas

February 2023 - Present

Lead Developer

- Co-founded a not-for-profit startup for creating ecocentric games
- Developed and launched Patchwork Beast, the startup's flagship game, on Steam

University of Texas at Austin - Austin, Texas

June 2022 - August 2022

UTCS Program Assistant

- Tutored Swift through Xcode to effectively design and develop apps for iOS
- Taught C++ & PID with Arduino to program a robot to navigate autonomously in the real world
- Trained others in using HTML & JavaScript with Phaser to create deployable web games

PROJECTS

OpenCityAI (Python/HTML/CSS/JS, Solo)

January 2023 - Present

- Developed and launched AI chat model on United States open city data
- Utilized PyTorch and Tensorflow to train a large language model on city datasets, optimized for question answering using SQuAD2.0
- Validated against current AI solutions, outperforms Google Bard and Microsoft Bing
- Trained on more than 200,000 datasets from 200+ cities

AuditoryAR (Python/HTML/CSS/JS, Solo)

March 2023 - Present

- Built AR application for the hard-of-hearing which displays 3D text near the source of a sound
- Used natural language processing to analyze audio and then geospatially place it

TrafficEMS (Python/HTML/CSS/JS, Solo)

January 2023

- Created framework for scraping open traffic cameras data feeds for ML traffic analysis and GIS to optimize routing of EMS vehicles
- Created GIS routing web app which calculates optimal route with weight-based pathing

SmartCityData (Python/HTML/CSS/JS, Solo)

September 2022 - March 2023

- Centralized city data in an advanced search engine + API, with live updating for each city
- Created easy-to-use automatic in-browser preview system for visualizing data
- Custom-built web querying apps for data, displayed with pandas and Flask

Warehouse Transport (Python/HTML/CSS/JS, Solo)

August 2022 - December 2022

- Created GIS routing web application which calculates and displays CO2 emission and transport time of delivery trucks versus autonomous delivery robots over any given route
- Made Python API to handle various route, vehicle configurations, optimize distances, throughputs for visual delivery and comparison
- Extended OSRM routing engine, implementing predictions, scalable inputs



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GlobalPE (Python/HTML, Solo)

February 2023

- Created a user-friendly geographic site for professional engineers to find licensing registration and board pages for any country using Leaflet and pandas
- Designed pipeline to update site with more countries' sites

Patchwork Beast (GDScript, Team)

January 2023 - Present

- Developed a 2D top-down game about environmental destruction due to industrialization
- Published on Steam, integrated Steam Cloud and achievement support within the game

RPG Wurdle (GDScript, Solo)

May 2022

- Developed and published a mobile game on the Google Play Store & Amazon Appstore
- Implemented custom achievements and Play Games support within the app
- Made saved game states with custom database, coded a Wordle game with aesthetically pleasing elements, animations, and a clean user interface

MobileIDE (Python/GDScript, Solo)

June 2022 - July 2022

- Coded hardware-accelerated mobile application for running Python code
- Built with Godot Python libraries, deployed with Android Studio

Pysweeper (Python, Team)

November 2021

- Designed Minesweeper from scratch in Python using minimal libraries
- Built with Python packages and the visuals were implemented using SDL

Various Websites (HTML/CSS/JS, Solo)

November 2017 - Present

- Constructed various websites using HTML & CSS, deployed using Google Firebase
- Maintainer of OpenCityAI, SmartCityData, Warehouse Transport and other UT affiliated sites

Various Games (Python/C#/GDScript/C++, Solo)

August 2017 - Present

- Full cycle developed various games on Github, Google Play, Amazon, Steam, etc.
- Implemented UI, enemy AI, occlusion culling, procedural generation, navigation, animations, etc.

SKILLS

Green: 5+ Years, Orange: 3+ Years, Red: 1+ Year

JavaScript & TypeScript
English and Spanish Fluency
GDScript
SQL

Python & Flask/Django
C# & C++
Bash
Swift

HTML & CSS
Java
REST APIs
Kotlin

TOOLS

Linux
Visual Studio
Google Firebase

Git
Android Studio
PyTorch/TensorFlow

Godot/Unity/UE4
Docker
Octave

RELEVANT COURSEWORK

Engineering Computation
Physics and Mechanics

Software Design
Multivariable Calculus

Computer Science
Linear Algebra

LEADERSHIP EXPERIENCE & ORGANIZATIONS

Eagle Scout

March 2020

- Constructed an animal habitation for the Texas Wildlife Rehabilitation Council
- Led more than a dozen scouts to complete my project

Mental Health Awareness Advisor, Memorial High School

August 2019 - May 2020

- Organized mental health discussions, facilitated awareness and issue advocacy