Stephen Melnick

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Skills

- **Gameplay Programming :** Unreal Gameplay Ability System, Basic Network Prediction, UI Programming, 3D Locomotion Design, General Game Systems
- **Engine Programming:** 3D Resource Management, Input Mapping, Entity-Component Systems, Physics Modeling and Collisions, Vector Math, Texture/Shadow Mapping
- **Programming Languages:**
    - **Advanced:** C/C++, C#, JavaScript, HTML/CSS
    - **Proficient:** Python, Verilog, GLSL
- **Development Tools:** Visual Studio, Visual Studio Code, Git, Blender, Quixel
- **Game Engines:** Unreal Engine 4/5, Godot, XNA/MonoGame, SDL

Personal Projects

Rea Engine | Solo Developer **March 2022**

- Developed simple custom rendering system using OpenGL pipeline using SDL
- Designed easy-to-use entity-component system with messaging
- Implemented continuous collision detection for convex polygons based on Gilbert-Johnson-Keerthi model
- Developed font loading and atlas texture generation using FreeType
- Programmed custom *.obj file loader, with UV and N-gon support

Tether | Lead Developer **December 2021**

- Custom platforming physics with advanced movement systems
- Created unique character design with modeling, rigging, and expressive animation
- Created particle effect design
- Produced simple and communicative sound design

Rhythm Knights | Solo Developer **February 2023**

- Developed turn-based combat system, including rhythm component
- Implemented intuitive UI and menu systems
- Created simple 2D pixel artwork

GJK Implementation | Solo Developer/Designer **March 2021**

- Wrote and designed presentation for explaining methodology and foundational concepts
- Programmed in both C# and C++
- Implemented simple gift-wrapping algorithm for use with complex polygons
- Developed visualization/interactivity with Microsoft XNA

Professional Experience

Lab Research Assistant | Temple University Computer Science Dept., Philadelphia, PA **August 2019 – January 2021**

Doctoral Program Research Assistant, responsible for data research, computer programming, and hardware design necessary for experimentation.

Installer | Pierson Computing Connection, Mechanicsburg, PA **April 2018 – August 2018**

Help Desk Associate | Temple University IT, Philadelphia, PA **August 2015 – April 2018**

Education

Temple University, Philadelphia, PA
Coursework towards B.S., Computer Science (Data Structures and Algorithms, Low-Level Programming, Physics, Computational Probability and Statistics, Mathematical Concepts in Computing)

Additional Skills

Illustration, Watercolor Painting, Digital Painting, Technical Writing and Investigative Research, Creative Writing