

DEBBY LIN

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EDUCATION

UNIVERSITY OF PENNSYLVANIA

Bachelor of Science in Engineering in Digital Media Design (Computer Graphics)

Philadelphia, PA

Expected 2024

Relevant Coursework:

GPA: 3.77 - Dean's List

- Interactive Computer Graphics, Intro to Computer Systems, Data Structures and Algorithms, Artificial Intelligence, Programming Languages and Techniques, Game Design, Advanced Rendering, Procedural Computer Graphics

WORK EXPERIENCE

UNIVERSITY OF PENNSYLVANIA

Teaching Assistant for Game Design Practicum (CIS 5680)

Philadelphia, PA

Aug 2023 – Present

- Oversaw homework assignments and held weekly office hours to facilitate the development of original student game projects made with **Unity 3D** and **Unreal Engine**, featuring AR/VR, mobile gameplay, and multiplayer networking

SIG CENTER FOR COMPUTER GRAPHICS (University of Pennsylvania)

Generative Computer Graphics and Augmented Reality Research Assistant

Philadelphia, PA

Jun – Sept 2023

- Leveraged cutting-edge generative AI computer animation techniques to design features for the development of an interactive, educational, AR instructional guide application built for the **HTC VIVE** headset using **Python** and **PyTorch**

ETHIC (Tech-driven sustainable investment startup firm managing over \$3 billion in assets)

Software Engineering Intern

New York, NY

Jun – Aug 2022

- Deployed **RESTful API** to production utilizing webhooks to monitor company email campaigns and deliver real-time notifications to **50+** internal users using **Java**
- Built and released to production internal **Node.js** pages with **Javascript**, **Bootstrap**, and **AG Grid** to visualize messaging metrics and user permissions queried from **SQL** databases tracking **1,800+** email campaigns and **1,000+** users

IPC SYSTEMS, INC. (\$1.2 billion fintech provider to 750+ cities and 120,000 trading positions worldwide)

Quality Assurance Engineering Intern

Fairfield, CT

Jun – Aug 2021

- Integrated code coverage tools to generate reports on automated and manual test suite for flagship UNIGY trading communication system using **Java**; improved testing pipeline to impact **110,000+ platform users**

PROJECTS

3D ASSET DATABASE TOOL (Asset management replicating professional studio production pipeline)

Jan 2024 – Present

- Developed a full-stack web application connected to a 3D asset database for the **USD** pipeline, built using **SQL**, **React**, **Python**, **Amazon S3**, and **JavaScript**; Implemented **UX** design made with **Figma** and integrated features such as data storage and organization, version control, asset preview and visualization, and search and filtering to support robust and streamlined user workflow

SEAFARER (Stylistically rendered, procedurally generated, infinite boat simulator built with Unity 3D and C#)

Nov – Dec 2023

- Implemented custom procedurally-based toon shaders via Unity's **Universal Render Pipeline** to develop real-time cloud, skybox, and water assets, integrating support for dynamic and ambient lighting, multiple-light shadows, panning UVs, and seamless day-night cycles
- Enhanced water texturing via UV refraction, voronoi noise ripple effects, surface intersection foam, fresnel effects, and water depth

STAR CATCHER (Original VR game built with Unity 3D, C#, SteamVR, and the HTC VIVE system)

Apr – May 2023

- Developed collision detection, win/loss triggers, and dynamic power-ups and obstacles to create core gameplay and logic
- Managed seamless UI integration and integrated 3D visual and sound effects to elevate player experience and immersion

GPU-BASED MONTE CARLO PATH TRACER (Built with C++, GLSL, and OpenGL)

Jan – Mar 2023

- Implemented a GPU-based path tracer to simulate physically accurate light behavior; implemented global illumination, multiple importance sampling, various lighting integrators, and material properties to boost rendered realism

MINI MAYA (Mesh editor application built with C++, GLSL, and OpenGL in the style of Autodesk Maya)

Feb – Mar 2022

- Implemented mesh manipulation by engineering a half-edge data structure, polar camera, multiple file type processing and exporting (**OBJ**, **JSON**, **USD**), topology-editing functions, linear-blend skinning, and an interactive GUI to finetune mesh geometry

ACTIVITIES AND LEADERSHIP

PENCIL BITE ANIMATION STUDIO - Co-Founder, Lead Producer

Aug 2023 – Present

- Managed end-to-end film production for UPenn's premier animation studio; spearheaded management for comprehensive budget planning, production pipeline, guest speaker events, and an effective marketing campaign engaging with **860+ online users**

THE WEST PHILLY SWINGERS DANCE TROUPE - Creative Director, Choreographer, Performer

Jan 2022 – Present

- Led sold-out semesterly shows with **250+ attendees**, overseeing choreography, logistics, and all art direction using **Adobe CS**

TECHNICAL SKILLS

Tools: Unreal Engine, Unity 3D, Houdini, QT Creator, OpenGL, WebGL, Node.js, MySQL, Figma, JUnit, Git, USD, AWS, Docker, React
Languages: C++, C#, C, Java, Python, GLSL, SQL, JavaScript, TypeScript, LC4 Assembly Code, OCaml