

Austin Jetrin Maddison

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Builds gameplay and graphics with Unity, Godot, low-level APIs, and real-time interaction systems.

EDUCATION

Mahidol University International College

Expected Graduation: Jan 2026

B.S in Computer Science, Minor in Applied Mathematics (In major GPA 3.3)

EXPERIENCE

Mahidol University International College

Apr 2023 - Apr 2025

Teaching Assistant

Salaya, Nakhon Pathom

- Assisted students in mastering core programming concepts across courses including **Functional and Parallel Programming, Data Structures, Abstraction & Object-Oriented Programming, and Intro to Programming**.
- Provided **personalized guidance** in problem-solving and debugging, fostering a deeper understanding of course material.
- Graded **300+ assignments** across courses using automated scripts and manual instrumentation.
- Developed and refined **technical communication** and logical analysis skills, effectively conveying complex concepts to students.

Adapter Digital

Nov 2023 - Mar 2024

Software Developer, Part Time

Ari, Bangkok

Collaborated with design and innovation teams to create **3-player 3D game installation "Seemless City" for Bangkok Design Week 2024**.

- Implemented **real-time rendering features** such as **procedural meshes, HLSL shaders** using Unity's C# framework and high definition render pipeline.
- Highlight features: **dynamic multiple focal point vignetting** with variable feathering using signed distance fields (SDF), inertia **animation hooks**, fluttering cloth using **multi-scale perlin noise wind**, SDF **particle collisions, bloom/glare**.
- Extended **Intel RealSense's C# API** to allow for depth normalization and remapping to be used in calibration tool onsite.
- The reception was **overwhelmingly positive from 200+ participant surveys** and optional comments described that the full-body motion controls, multiplayer and 3D aspects were refreshing and unique.

Adapter Digital

Aug 2023 - Sep 2023

Software Developer, Internship

Ari, Bangkok

Developed a **real-time motion capture 3D installation** project "Hello Mascot" for the firm's product portfolio as their part of diversifying the kinds of digital products they can give to clients. The project's reception with colleagues was very positive and **surpassed expectations**.

- Collaborated with the innovation team's C# developer to implement **motion controls** using **Google's MediaPipe** library for pose landmark detection from external camera feed to interact with virtual character and world.
- Implemented **shaders for vegetation and cloud wind, stop motion clay river water wakes, stop motion clay character and fully gpu-driven 2D facial animations** using multi UVs and sin/cos functions for scheduling expressions.
- Modeled, textured, animated, layout and lit environment props and character assets using high-poly to low-poly pipeline.

PROJECTS

Brackey's Game Jam 2024.2 - Lights Out

GODOT, GDSCRIPT, GLSL

Stylized 2D game prototype developed for Brackey's Game Jam 2024.2 with GPU-accelerated VFX.

- Developed **palette remapping** and **dynamic film grain shaders** for tense visual aesthetic.
- Implemented **GPU-accelerated VFX** and 2D light system for various pickable items and environment lights.
- Programmed **gameplay systems**: torch combat, sanity, audio, and transitions.
- Designed all **game sound special effects** and wrangled them into the game engine and game systems.

Hello Mascot

UNITY, C#, GOOGLE-MEDIAPIPE

Interactive mascot demo enabling full-body pose tracking and stylized GPU shaders.

- Enabled **full-body interactions** using Google MediaPipe pose tracking.
- Designed **GPU shaders** for stylized visuals and procedural sprite based facial animation via UV sets and blending.
- Modeled and animated high-fidelity characters for **live installations**.
- Delivered a successful **proof-of-concept** for internal company's product portfolio.

E-Sports Minecraft Modding and Server DevOps

JAVA, DOCKER, HTML, JS, FFMPEG-(WEBM), PYTHON, UNIX

- E-sports competition platform with modding, server deployment, and participant coordination.
- Managed end-to-end competition logistics, including scheduling and participant coordination.
 - Deployed dockerized game servers for matches, ensuring reproducibility and stability.
 - Programmed custom mods by forking plugins to enforce competition rules and enhance gameplay.
 - Built static websites and assets for onboarding and competition information using GitHub Pages.
 - Created a registration dashboard using Python and Google Workspace API for seamless participant management.

Seamless City - Bangkok Design Week 2024

UNITY, C#, INTEL-REALSENSE

- Multiplayer 3D installation showcased at Bangkok Design Week 2024 with advanced graphics and depth sensing.
- Implemented advanced graphics: multifocal vignetting, cloth dynamics, SDF-based collisions, and interactive bloom/glare.
 - Extended Intel RealSense C# API for onsite depth camera calibration.
 - Praised by 200+ attendees for it's unique multiplayer interaction.

Interactive Pathfinding Algorithm Visualizer

C#, HLSL, UNITY-URP

- Real-time pathfinding algorithm visualizer with modular search support and interactive UI.
- Built a real-time algorithm visualizer supporting multiple search algorithms (A*, BFS, Drikjsta, Greedy) with modular architecture.
 - Developed an event-driven UI system with dynamic updates and heuristic cost overlays.
 - Integrated real-time performance metrics and intuitive grid editor for scenario customization.

Mini Sky Engine

OPENGL, C#, GLSL, OPENTK, DEAR-IMGUI

- Atmospheric rendering engine simulating sky scattering and volumetric clouds in real-time.
- Simulated atmospheric effects with sunlight, sky scattering, and volumetric clouds using GPU LUTs.
 - Built raymarcher render engine with FBM noise and procedural density shaping for clouds.
 - Built engine architecture in C# with shader management and ImGui for debug GUI.

Passive Matrix LCD Shader

GLSL, GODOT, C#

- Procedural shader simulating optical effects of monochrome passive matrix LCD displays.
- Simulated optical effects like parallax shadows, shimmer, and backlight bleed.
 - Engineered a procedural pixel matrix using GLSL for authentic LCD rendering with arbitrary buffer inputs.
 - Optimized shader performance for real-time applications.

SKILLS

Programming Languages

C#/.NET Java Python JavaScript C/C++ TypeScript Go Scala Lua VEX GLSL

Web Development

HTML/CSS React Hugo Tailwind Spring-Boot Jinja2 Flask Vue NextJS Bootstrap Vite REST WebAssembly
Electron ThreeJS Firebase Redis SQL MySQL PostgreSQL

Data Science

Jupyter-Notebook NumPy SciPy Pandas Seaborn Matplotlib MATLAB TensorFlow Apache-Spark

Graphics & 3D

OpenGL Godot Unity UE5 Houdini Maya Blender Cinema-4D Redshift Adobe-Suite ComfyUI DearImGUI CUDA
OpenCL FFMPEG OpenCV

DevOps & Tools

Git Unix CMAKE JUnit GitHub-Actions Kafka Apache-Airflow Kibana-ElasticSearch Docker

AWARDS

Outstanding Cambridge Learners Awards - Thailand: Highest Achievement Award for Digital Media and Design 2020

Cambridge Assessment International Education

LANGUAGES

English: Native speaker, Thai: Conversational