Austin Jetrin Maddison

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Crafts responsive, user-focused interfaces, prioritizing constraints and polished UI/UX.

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

HateMatch - Dating Platform Web Application `VUE, VUETIFY, JAVA, SPRING`

Dating platform web application that connects users through shared dislikes and contrasting preferences.

- **Designed and developed** the entire frontend using Vue and Vuetify, including **user authentication**, **profile management**, and simple interactive **matching interface**.
- Engineered **custom Vuetify theme** and a **context sensitive floating cursor** for fun profile navigation, elevating UX.
- Integrated Java Spring backend for **secure user authentication** and data management.
- Prototyped **matching algorithm** using pairwise user preference negation, enabling MVP-level functionality with future optimization in mind.

Technical Blog Platform `HUGO, TAILWIND, THREE.JS, FFMPEG`

Responsive static blog platform with custom Hugo theme, Tailwind styling, and rich media content.

- Built a **UI framework** with custom snippets for grid-based elements, dropdown reveals, **animated thumbnails**, **embedded Three.js**, and **filter content by tag or category**.
- Developed **parallax scrolling effects** with tag-based filtering systems, creating a visually engaging browsing experience.
- Ensured **subtle animations for most interactable elements**, making all user interactions feel polished but doesn't get in the way of the content.

JSON-Based Resume Generator `FLASK, JINJA2, TAILWIND, POSTCSS, JAVASCRIPT, SSE`

Automated resume generator creating position-specific resumes from JSON using Flask and Jinja2.

- Engineered a **Flask and Jinja2** web application that generates position-specific resumes from JSON data sources.
- Implemented **server-sent events** (SSE) via subprocesses to provide real-time updates during resume generation.
- Developed a **filesystem watching system** that automatically rebuilds resumes when source content changes.
- Created an **index interface** to **browse all generated resumes** for each position.
- Designed a **modern Harvard-style** theme using Tailwind CSS with PostCSS processing.

ATK Generator `ELECTRON, PYTHON, BLENDER-CLI`

Cross-platform desktop app generating photorealistic ATK test results with handwritten timestamps.

- Developed a **desktop app** enabling users to input metadata and **generate photorealistic ATK test images** with handwritten timestamps with preset environments.
- Modeled and surfaced **high-poly 3D ATK asset** using Blender, Substance Painter, and Designer.
- Engineered a Python backend with **Blender CLI** to automate input textures and render jobs based on user-defined parameters.

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.

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 envrioment 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.

Streaming Data Pipeline & Real-Time Visualization `PYTHON, KAFKA, ELASTICSEARCH, KIBANA`

Real-time financial visualization platform using Kafka, Elasticsearch, and Kibana dashboards.

- B**Built a real-time streaming data pipeline** integrating **financial market** and **currency exchange data** from **Alpaca Stream API** and **Free Currency API** using **Kafka** for ingestion and **Elasticsearch** for storage and indexing.
- **Engineered Elasticsearch queries** for **structured search**, **filtering**, and **aggregation**, optimizing **data retrieval** and enabling real-time insights into financial trends and correlations.
- **Designed interactive dashboards** in **Kibana** and applied **time-series analysis** and **ETL transformations** for efficient data processing, schema optimization, and trend visualization across top companies and sectors.

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*