Ethan Loo

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EDUCATION

Georgia Institute of Technology   Atlanta, GA
BS Computer Science - CGPA: 3.84   *May 2022 - May 2026 (anticipated)*

EXPERIENCE

Keysight Technologies | Eggplant   Penang, MY
QA Engineer Intern   *May 2024 - Aug. 2024*

- Authored and debugged automated model-based and script-based test scripts in Eggplant Functional. Discovered 4 breaking bugs and led development of automated MBT tests for the respective test cases. Wrote approximately 300 lines of code in SenseTalk.
- Spearheaded the development and implementation of front-end, back-end, and other test procedures (**Cypress tests**, API/BDD tests, MBT tests) for new systems and application features under development.
- Collaborated in defining the minimum viable product (MVP) for Eggplant DAI version 7.5.0-0.

PROJECTS

Technique   *React | TypeScript*

- Architected and implemented five dynamic React/TypeScript pages (News, Life, Opinions, Entertainment, Sports) using React Router for client-side routing and Axios for paginated REST API calls.
- Engineered a WYSIWYG editorial dashboard by integrating **QuillJS** for rich-text creation and **react-dropzone** for drag-and-drop media uploads; added client-side file-type/size validation and real-time upload progress indicators.
- Ensured mobile-responsive layouts with CSS Grid & Flexbox; applied ARIA roles/labels and conducted cross-browser QA (Chrome, Safari, Firefox) to meet WCAG AA standards.
- Collaborated in 1-week Agile sprints within a 7-person team: managed Git feature branches, led peer code reviews on GitHub, enforced ESLint formatting.

GTEsports: Gamefest (gamefest.gatechesports.com)   *React | TypeScript | MongoDB*

- Led frontend development for Gamefest, an esports tournament platform with **246+ competitors across Atlanta**. Deployed frontend via Netlify and backend via Render, with MongoDB as the primary database.
- Built a weighted raffle system using RESTful APIs, dynamically selecting and displaying 1st-3rd place winners on a public leaderboard.
- Integrated with Cloudflare to monitor analytics; served **2.13k unique visitors** and 95.3k total requests over 30 days, with 71.43% cache hit rate.
- Worked in 1-week Agile sprints within a 5-person team; enforced Git workflow, ESLint, and Prettier for code consistency.

Vertically Integrated Project: Video Game for Power Grids   *Unity | C#*

- Developed and maintained Azure server with a focus on secure Gurobi API endpoints, efficient concurrency handling, and thread-safe configuration, ensuring high-performance and reliable data management for optimization simulations. Used an **ASP.NET Core controller to handle HTTP Post requests**.
- Designed and implemented a robust **Gurobi optimization model** to simulate and analyze power grid scenarios to optimize power flow. Engineered cache fallback and lookahead systems that maintained real-time data delivery during server connectivity issues (e.g., packet loss, high latency), ensuring uninterrupted system performance.
- Planned and developed the UI/UX design for the video game using pixel/3D rendering software like Aseprite and MagicaVoxel.

AI ATL 2024: AgentArena   *React | Javascript*

- Developed a web-based LLM simulation platform using React for the frontend and Flask for the backend, enabling users to simulate and analyze agent interactions in multi-agent scenarios (Prisonners' Dilemma). Utilized Fetch API and React Hooks to dynamically fetch and update game state data in real-time.
- Leveraged Plotly.js for interactive data visualization, displaying agent performance metrics such as **niceness, forgiveness, retaliatory, troublemaking, and emulative behavior** over multiple simulation rounds.
- Analyzed behavioural patterns/tendencies of different LLM models (Claude, GPT-4, Gemini) when pitted against different agents/strategies (random, tit-for-tat, etc.). **Project Report**

EXTRACURRICULARS

Achievements:

- Achieved 1st Degree Black Belt in Taekwondo ITF.
- Achieved PADI Open Water and Advanced Open Water Diver License.
- Completed BWC (Basic Wall Course) top rope sport climbing certification.