

Ashish Ajin Thomas

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EDUCATION

University of Toronto

Honours Bachelor of Science in Computer Science (Specialist)

Toronto, ON

Sep 2023 – Jun 2027

EXPERIENCE

Dynamics Graphics Project Lab (DGP Lab), University of Toronto

Sep 2024 – Present

Research Assistant, Novel Creative Writing Methods Using LLMs

Toronto, Canada

- Developed an interactive platform using Flask and p5.js to simulate Nabokov's card-based creative writing method, supporting research on LLM-assisted storytelling.
- Collaborating with PhD researchers and local writers to study LLMs' impact on the creative writing process, yielding insights into AI's role in enhancing narrative structures.
- Created an intuitive user interface, facilitating participant engagement with AI prompts for dynamic, experimental writing.

UTMIST (University of Toronto Machine Intelligence Student Team)

Sep 2024 – Present

Team Lead, AI Warehouse Collaboration

Toronto, Canada

- Led an 8-member team of developers & designers to develop an AI-driven Evolutionary Battle Simulator in Unity, optimizing agent behavior by 20% through Genetic Algorithms (NEAT) and Reinforcement Learning.
- Partnered with AI Warehouse (500K+ subscribers, 4.7M average views per video) to design agents for an educational video on AI simulations, reaching broad audiences and raising awareness about AI applications.
- Coordinating team research for a CUCAI conference submission, advancing contributions in AI-driven simulations for academic and educational purposes.

Solstice Technologies

May 2023 – Jul 2023

Full Stack Software Development

Dubai, UAE

- Engineered a full-stack web application with Flask, Jinja, p5.js and PostgreSQL, improving dynamic content rendering by 35% and user engagement by 20%.
- Integrated Google OAuth for secure, efficient user authentication, reducing sign-up times by 60%.
- Enhanced deployment efficiency by 30% with Docker, creating a scalable AWS infrastructure on EC2 with Nginx and Gunicorn, increasing site stability under heavy traffic.

PROJECTS

Open-Source NEAT Algorithm for Unity | Python, REST API, Unity, C#

Sep 2024 - Present 🔄

- Implemented the NEAT (NeuroEvolution of Augmenting Topologies) Algorithm in Python for real-time neural network evolution in Unity simulations, inspired by K. O. Stanley's research.
- Developed a REST API for seamless integration with Unity, reducing setup time by over 80% for real-time evolutionary simulations.
- Published as open-source, providing a modular NEAT integration tool for AI and game development communities, boosting accessibility and adoption.

Home Assistant | Python, Flask, BeautifulSoup4, TensorFlow, OpenAI API

Aug 2024 🔄

- Built an advanced Home Assistant that uses OpenAI API and a custom-trained AI model to automate 15+ tasks, including server management and music control.
- Integrated a TTS model trained for voice imitation, enhancing user interaction with an engaging, science fiction-inspired voice assistant.
- Deployed on Raspberry Pi, achieving 20% power reduction compared to prior systems, and designed a custom 3D-printed robot model for improved user feedback.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, C, C#, Java, R, SQL (Postgres, MySQL, SQLite), HTML/CSS

Frameworks & Tools: Flask, React, React Native, Node.js, Express.js, Docker, THREE.js, p5.js

Libraries: TensorFlow, Scikit-Learn, BeautifulSoup4, Pandas, NumPy, Matplotlib, Plotly, Selenium

Developer Tools: Git, GitHub, AWS (EC2, S3), Google Cloud Platform, VS Code, PyCharm, IntelliJ IDEA