

Statement of Research Interest

LE TRUNG Ethan

Current and past research

I've been studying mathematics, physics and biology for the last five years (in high school and college) before joining the Engineering Polytech School of Lyon in September 2022 in Computer Science. The engineering program is mainly focused on web development, but I've also taken courses in cryptography, mathematics, optimization and artificial intelligence.

During the first year of my course, I had the opportunity to work with one of my classmates for Polyenco (the company attached to our university) and we were tasked with redesigning their website. Wanting a more modern design website, we worked in pairs with their main developer. As we had to do weekly feedback with the client and our colleague, this required great communication skills and allowed me to work on it.

This program also included a five-month internship that I completed at a web development company called Axopen in Lyon, France, from September 2023 to January 2024. Developing web applications in a professional way requires rigor and good teamwork skills. It was a great opportunity to develop my programming skills in a dynamic software company known for its code quality.

This year, as part of our studies, we implemented, in a group of two, an artificial intelligence able to play Connect Four using different basic algorithms (Minimax, Alpha-Beta, MCTS). It was an opportunity to have a first vision on how we could implement an AI in a concrete project.

I am particularly interested in human and social sciences, discovering and understanding how the human brain works and learning about cognition. This is why I have a strong interest in Artificial Intelligence: AI leads to interdisciplinary studies combining mathematics, data, computer science, human and social sciences (cognition, human behavior, psychology), which I find fascinating.

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With this in mind, I plan to complete the last year of my current Computer Science education with an additional Master in Artificial Intelligence. This would allow me to graduate in June 2025 with both a degree in Computer Science Engineering and a Master in Artificial Intelligence. In this way, during the next semester of my master's program (Sept. 2024 - Jan. 2025), I will take three courses that cover important parts of the AI field, such as :

- Dynamic Knowledge
- Deep Learning and Image
- Theory and Practical Applications of Large Language Models

In order to complete this degree specialized in AI, I need to do a 5-month internship abroad, ideally from March 2025 to July 2025.

I expect that my future internship will focus on areas like the ones mentioned above through concrete projects. For example, it would be very interesting to work on certain environmental projects or to implement tools for human learning. In this way, it would be a pleasure to work and research under your guidance.

Future research directions

After I graduate with an engineering degree and a master's degree in AI, I would like to pursue a Ph.D. in AI or cryptography.

I envision my future research to span across some interrelated areas of mathematics, computer science, and concrete fields such as environment, human behavior, etc.

In fact, I would like to understand some areas or problems such as human learning, cognition or data mining, how we are able to control population, etc.