



Bachelor Thesis / Master Thesis:

Implementation of LLM and NLP in Renewable Energy Sector

Are you fascinated by the potential of cutting-edge technologies to revolutionize industrial sectors, particularly renewable energy? Are you eager to bridge the gap between programmers and factory workers by implementing Large Language Models (LLM) and Natural Language Processing (NLP)? Join us for an exciting Bachelor/Master thesis opportunity focused on exploring and implementing LLM/NLP in the renewable energy industry.

Project Description:

Inspired by the quote by William Gibson, "The future is already here - it's just not evenly distributed," this thesis aims to harness the power of LLM and NLP to drive innovation in the industrial sector, with a particular focus on renewable energy.

- Literature Review:** You will commence your exploration by delving into a diverse range of literature on the implementation or potential implementation of LLM/NLP in industrial sectors, with a specific emphasis on renewable energy. This process will give you insights into emerging trends, challenges, and opportunities in this domain.
- Identification of Opportunities:** Building upon your literature review, you will identify potential opportunities for implementing LLM/NLP in the renewable energy sector. This may include enhancing data analysis, optimizing processes, improving stakeholder communication, and more.
- Real-World Application:** Leveraging real-world measurement data from a renewable energy power plant provided by our professorship, you will implement LLM/NLP as an AI agent. This implementation will serve as a tangible demonstration of the potential benefits of integrating advanced language models into industrial workflows.
- Evaluation and Analysis:** Throughout the implementation phase, you will evaluate the performance of the LLM/NLP system, analyzing its effectiveness in addressing the identified challenges and opportunities in the renewable energy sector.

Key Requirements:

- Strong background in Large Language Models (LLM) and Natural Language Processing (NLP), with proficiency in Python programming.
- Familiarity with renewable energy systems and industrial processes is advantageous.
- Access to paid LLMs (e.g., GPT-4, Gemini, Claude 3) would be beneficial but not mandatory.
- Self-motivated and capable of working independently.

Remote Work Opportunity:

This thesis can be conducted entirely online, allowing you to work from any location.

Start date: 1 April 2024.

Contact:

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