ACI: **A**dvanced **C**hart **I**nterpreter for 3D, Multivariate, and Panel Charts
(Master Thesis)

In a data-rich world, charts serve as vital tools for visually conveying complex information. However, the thorough analysis of specialized line chart types—namely, 3D, multivariate, and panel charts—remains relatively unexplored within the research community. These charts pose distinct challenges due to their complex structures.

In this research, we aim to develop the ACI system to address the challenge of extracting metadata information from predefined chart types by employing state-of-the-art models.

1. Dataset Preparation:
    a. Build synthetic diverse 3D, multivariate, and panel charts from the available benchmarks.
2. Model Training and Experimentation:
    a. Train different neural networks, considering transformer-based models and LLMs.
    b. Explore different model variations and integrate innovative modules.
3. Performance Evaluation:
    a. Quantitative & qualitative evaluation of the trained models.

Throughout your research, you'll benefit from experts' guidance and support. You will have access to a powerful computing cluster to facilitate your experiments. **Significant findings will be submitted as a research paper at a prestigious conference.**

Requirements:
1. Demonstrated interest in the topic. **Related work [1-5].**
2. Experience with deep learning models, such as transformers and LLMs.
3. Familiarity with the Linux operating system and comfort with terminal commands.

If interested, please send your application, which should include your CV and transcript of records (optional: motivation letter) to:
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References:
1. https://ieeexplore.ieee.org/document/10192564
2. https://arxiv.org/pdf/2304.02173.pdf
3. https://arxiv.org/pdf/2306.11699.pdf
4. https://arxiv.org/abs/2305.01837
5. https://ieeexplore.ieee.org/document/10030557