

## **Motivation Letter**

Dear Dr. Augenstein,

I am writing to express my strong interest in the PhD position at the CopeNLU group at the University of Copenhagen. With a background in Natural Language Processing, both academically and professionally, and a deep curiosity for how language is understood by machines, I am particularly excited about the opportunity to contribute to a project that explores the explainability of AI systems through the lens of human linguistic cognition.

Currently, I am pursuing a Master's degree in Computer Science with Speech and Language Processing, which has further strengthened my technical foundation and broadened my perspective on computational linguistics and machine learning. Alongside my studies, I am working on my MSc dissertation on hallucination span detection in LLMs. This work was driven by my motivation to investigate interpretability more systematically.

Before my Master's, I worked as an NLP Data Scientist in the pharmaceutical industry. There, I gained hands-on experience developing NLP solutions for real-world problems, which required not only strong technical skills but also a solid understanding of domain-specific language. This role highlighted the importance of transparency and explainability, especially when deploying models in high-stakes environments such as healthcare.

I have been interested in explainability since my undergraduate studies, where I worked on a project exploring noun gender prediction in language models. I used formal and contextual embeddings to investigate whether machine predictions align with human linguistic patterns. This experience sparked my fascination with how models internalize language structure and led me to broader questions about fairness, bias, and interpretability in NLP systems.

This particular PhD position is ideal for me because it will allow me to focus on developing innovative methods to understand and explain the inner workings of NLP models. I believe that making models more interpretable is essential for building trust and accountability in AI systems. I am eager to contribute to this field by not only analyzing how these models work but also uncovering where they fall short and why.

I am confident that my academic training, research experience, and industry background make me a strong fit for this position. I bring with me a curious and open mindset, a strong passion for interpretable NLP, and a drive to conduct meaningful research that bridges theory and practice. I also have strong communication skills, both written and oral, and I value collaborative and interdisciplinary work.

The CopeNLU group, with its interdisciplinary approach and vibrant research community, is the ideal place for me to pursue this vision. I am excited about the possibility of contributing to a project that has both scientific depth and real-world social impact.

Regards,

Arijit Gupta