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TTIC Recruiting Committee
Toyota Technological Institute at Chicago
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Dear TTIC Recruiting Committee,

I am writing to apply for a research assistant professor position at Toyota Technological Institute at Chicago (TTIC). I am a fifth-year Ph.D. student at the Computer Science Department at Johns Hopkins University, and I am fortunately advised by Dr. Benjamin Van Durme. I will graduate in the summer of 2024.

My research fields are artificial intelligence (AI) and natural language processing (NLP). My research aims to develop AI models that can efficiently comprehend and generate long texts. While current research focuses on reducing the complexity of transformers, my research indicated that they failed to utilize long-range context. I proposed methods that represent texts beyond the de-facto token embeddings, for example directly using vectors as prompts or representing texts with dynamic granularity. Besides text, I also worked on sequence modeling that interacts with a temporal database, suggesting the context capacity of AI models can be greatly extended.

I publish papers in top-tier machine learning and NLP conferences. Notably, my first-author paper about soft prompts was awarded the Best Short Paper in NAACL-HLT 2021. My physics major during undergraduate study armed me with math skills such as modeling. During my Ph.D. career, I broadly collaborated with people in both academia and industries on projects related to text representation. These experiences not only strengthened my understanding of sequence modeling but also sparked my curiosity about the related unsolved problems. I am excited to research effective long-context language modeling and the interaction between AI models and databases. I am also willing to share my knowledge with students by teaching specialized topics about NLP, such as language modeling, information extraction, and efficient methods for transformers.

In the era of large language models, it has never been so important to understand the behavior of language models and advance the capabilities of AI models to texts with complex semantics. TTIC is a great platform for me to conduct independent research and pave the way for my future career in academia. I am attracted by the brilliant researchers here and am more than excited to collaborate with them!

Thanks for considering my application! I am looking forward to your reply.

Sincerely,
Guanghui Qin