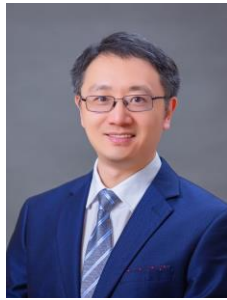**Keynote Talk 1:**

Prof. Guilin Qi

Southeast University

Title: Integrating Knowledge Graph with Large Language Model: From the Perspective of Knowledge Engineering

Abstract: Knowledge graphs have been considered as a new generation of knowledge engineering and have widely used in many industrial applications. However, the construction and maintenance of a knowledge graph rely on experts, this hinders the rapid replication of knowledge graph-based products. Recently, large language models such as ChatGPT have achieved great success for Artificial General Intelligence. Language models can be considered knowledge bases which can support knowledge services such as question answering. In this talk, I will introduce recent work on integrating Knowledge Graph with Large Language Model from the perspective of knowledge engineering. I will introduce how language models can support ontology extraction, triple extraction, entity alignment and knowledge reasoning for knowledge graph engineering. I will then introduce how knowledge graphs can support prompt generation, knowledge editing, multi-step reasoning for knowledge engineering of large language models.

Bio: Dr. Guilin Qi is a professor working at Southeast University in China. He is the head of the Knowledge Science and Engineering Lab and the director of institute of cognitive science at Southeast University.   He is one of the Editor-in-Chiefs of Data Intelligence and an associate editor of Journal of Web Semantics. He received his PhD in Computer Science from Queen's University of Belfast in 2006 and has worked in the Institute AIFB at University of Karlsruhe for three years. His research interests include knowledge representation and reasoning, knowledge graph, natural language processing, and semantic web. He has published over 200 papers in these areas, many of which published in proceedings of major conferences or journals. He has published a book on knowledge management for the Semantic Web in 2015 and a book on Knowledge Graph in 2019. He is one of the founders of OpenKG, a Chinese community for open knowledge graph and has lead the project RichPedia, which results in a large-scale open multi-modal knowledge graph. He has won the best-short paper runner-up award in CIKM 2017, and has a paper won the best-student paper award in ICTAI 2015.

Keynote Talk 2:

Prof. Haofen Wang

Tongji University

Title: Industry-level Knowledge Graph Platform for Large-scale, Diverse and Dynamic Scenarios

Abstract: In the process of digitalization of enterprises, massive amounts of data have been accumulated. Enterprises need to continuously create value for users, while achieving efficient business management and risk control. This puts high demands on the digital infrastructure of enterprises, and also provides diverse application scenarios for AI technologies such as Knowledge Graph (KG) and Large Language Model (LLM). This talk takes merchant management and risk control as examples to introduce the application of KGs in enterprise digitization. In particular, it emphasizes the requirements for deep context awareness due to the portrait coverage and risk insight of thin data customer groups such as small and medium merchants, new users, and sleeping users. Enterprise-level knowledge management is realizing the transition from binary static to multi-dynamic model. Combined with current industrial applications and research progress, we summarized the possible applications of LLM and KG in enterprise digitalization. We point out that LLM has limited application due to the hallucination problem, while KG has wide applications in reasoning, mining, clue insights, analytical querying, etc. because of its expressive ability, interpretability and high computational efficiency of structured knowledge. At the same time, the dual drive of LLM and KG has huge space due to their complementary capabilities, and it is also predicted to be the key path for the industrialization of LLM in language understanding and interactive applications. On this basis, we further introduce the current challenges of KG technology. Finally, combined with the practice in several vertical sectors such as finance and healthcare, we introduce the industrial-level Semantic-enhanced Programmable Graph SPG and KG engine co-built by OpenKG.

Bio: Dr. Haofen Wang is a Distinguished Researcher and Ph.D. supervisor under the "100 People Plan" at Tongji University. He is one of the initiators of OpenKG, the world's largest alliance for Chinese open knowledge graphs. He has participated in and led several national-level AI-related projects, published over 100 high-level papers in the AI field with more than 3,900 citations and an H-index of 29. He developed the world's first interactive virtual idol—"Amber Xuyan." Additionally, the intelligent customer service robots he built have served over 1 billion users. Currently, he holds several social positions including Vice Chairman of the Terminology Committee of the Chinese Computer Federation (CCF), Secretary-General of the Natural Language Processing Society, Director of the Chinese Information Society of China, Executive Committee member of the Large Model Committee, Deputy Secretary-General of the Language and Knowledge Computing Committee, and Deputy Director of the Natural Language Processing Committee of the Shanghai Computer Society.

Keynote Talk 3:
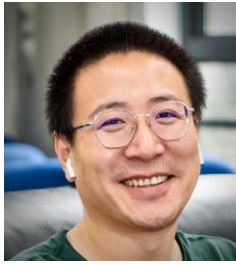
Prof. Wei Hu

Nanjing University

Title: Knowledge Graph-Based Large Language Model Finetuning and Its Applications

Abstract: General-purpose large language models (LLMs) often lack accurate domain-specific knowledge, leading to inaccurate and unreliable outputs, and even making practical applications difficult. Knowledge graphs provide a structured way to describe concepts, entities, and their relationships in the real world, serving as an effective way to enhance LLMs with knowledge. In this talk, I will first introduce a continuous relation extraction technique to dynamically acquire knowledge for constructing knowledge graphs. Then, I will present a parameter-efficient finetuning method for LLMs using knowledge adaptation, effectively integrating knowledge graphs into LLMs. Finally, I will discuss the applications of these techniques in chronic disease management and configuration translation.

Bio: Dr. Wei Hu is a full professor in the School of Computer Science at Nanjing University. His main research areas include knowledge graph, data integration, and intelligent software. He has conducted visiting research at VU University Amsterdam, Stanford University, and University of Toronto. He has published over 50 papers in top-tier conferences and journals, such as SIGMOD, VLDB, ICDE, WWW, SIGIR, ICML, NeurIPS, AAAI, IJCAI, ACL, EMNLP, NAACL, ICSE, TKDE, VLDBJ, TSE, and TNNLS. He has received the Best Paper Awards at JIST, CCKS, and CHIP, and the Best Paper Nomination at ISWC.

Industry Talk:

Siwei Gu

NebulaGraph

Yihang Yu

NebulaGraph

Title: Integrating GenAI with Graph: Innovations and Insights from NebulaGraph

Abstract: In this talk, we delve into the pioneering work of the NebulaGraph team in integrating Generative AI (GenAI) with graph databases. Starting with Graph RAG and KG construction, we explore innovative strategies such as the Chain of Exploration—a planning-based graph data reasoning approach—and the development of Graph Memory. These advancements highlight our ongoing journey to bridge the capabilities of GenAI and graph technologies, offering novel solutions and insights. We will share key experiences and explorations from our team, showcasing the potential and impact of this interdisciplinary integration.

Bio: Siwei Gu leads the GenAI initiatives at Vesoft Inc., serving as a NebulaGraph committer. Notably, he was the first to introduce the concept of Graph RAG (in LlamaIndex), where the Graph structured data in RAG/GenAI was initially explored. Recognized as a Microsoft MVP for his expertise in Python and AI, he is also a passionate blogger, podcaster, and advocate for open-source software. Join him at the VLDB workshop to explore cutting-edge developments in graph databases.

Yihang Yu is an Algorithm Engineer within the GenAI Team at Vesoft Inc., where he specializes in developing exciting LLM applications using NebulaGraph. Known for his broad interests and insatiable curiosity, Yihang blends innovative thinking with technical expertise to push the boundaries of what's possible in graph AI. A lifelong learner, he is committed to exploring and implementing advanced algorithms that transform data interactions.