

Dnotitia Secures 16 Billion KRW Government Projects to Advance Vector Database Technology for LLM

Dnotitia, an innovative AI startup, has won two major South Korean government projects worth 16 billion KRW.

SEOUL, SOUTH KOREA, September 10, 2024 /EINPresswire.com/ -- [Dnotitia](#), Inc. (Dnotitia), an innovative AI startup specializing in the integration of artificial intelligence (AI) and data for value creation, has secured two major Korean government-backed projects, valued at a total of 16 billion KRW. These initiatives aim to drive the development of cutting-edge hardware and software for vector databases, a key technology in enhancing Large Language Models (LLM) through Retrieval-Augmented Generation (RAG). RAG is a critical component in AI, enabling the integration of real-time information, and personalized services, and enhancing long-term memory capabilities, all while reducing hallucinations (erroneous outputs from AI models). At the core of this breakthrough is Dnotitia's high-performance vector database technology, which is essential in addressing these challenges.

The first project, titled "Development of Vector Database for Long-term Memory Storage of Hyperscale AI Models", is funded by the Ministry of Science and ICT of South Korea and managed by the Institution of Information & Communications Technology Planning & Evaluation (IITP). Through this project, Dnotitia will develop open-source software for a world-class, high-performance, and high-accuracy vector database. This four-year project has secured 8.8 billion KRW in funding and aims to establish a global benchmark in AI memory solutions. The second project, titled "Development of Vector Database Accelerator for Large Language Models," is supported by the Ministry of Trade, Industry, and Energy of South Korea. The goal of this initiative is to create the world's first semiconductor chip specifically designed for vector data



processing. This project, receiving 7.3 billion KRW in funding over three years, is expected to revolutionize the hardware landscape for AI applications, significantly boosting computational efficiency in AI-driven environments.

Dnotitia is partnering with several of South Korea's most prestigious academic institutions and industry leaders to ensure the success of these projects. Key collaborators include Seoul National University, Pohang University of Science and Technology (POSTECH), Sungkyunkwan University, and CUBRID, Korea's leading open-source database company. This collaboration will lead to in real-world test using Furiosa AI's high-performance AI semiconductor chip. The vector database system developed through these efforts will be integrated SBS's proprietary content platform, one of Korea's top broadcasting services.

The second project will focus on developing the VDPU (Vector Data Processing Unit), a specialized semiconductor chip designed to accelerate vector data computations. To optimize the chip's design and functionality, Dnotitia has partnered with ASICLAND, Korea's sole TSMC Design House. Additional collaboration includes US San Diego, Ewha Womans University, Kyung Hee University, and MOBIGEN, a leader in data analytics. The VDPU chip will be utilized to demonstrate LLM services within enterprise AI platform, showcasing its practical applications in real-world AI ecosystems. As RAG systems become an indispensable component of LLM services, the demand for vector databases has increased exponentially. Although numerous vector database startups have emerged globally, South Korea has seen limited development in this area until now. As the first company in Korea to specialize in vector database, Dnotitia is set to differentiate itself by launching the world's first vector database-specialized semiconductor chip and a high-performance, open-source vector database software as part of these groundbreaking projects.

"We are honored to have been awarded these two prestigious projects," said Moo-Kyoung Chung, CEO of Dnotitia. "These initiatives will allow us to simultaneously advance vector database software technology and develop dedicated hardware accelerators. Our ultimate goal is to deliver world's most high-performing, fully integrated hardware and software solution for LLM and RAG applications. Through these collaborations and technological advancements, we aims to establish Dnotitia as the global leader in vector database technology."

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