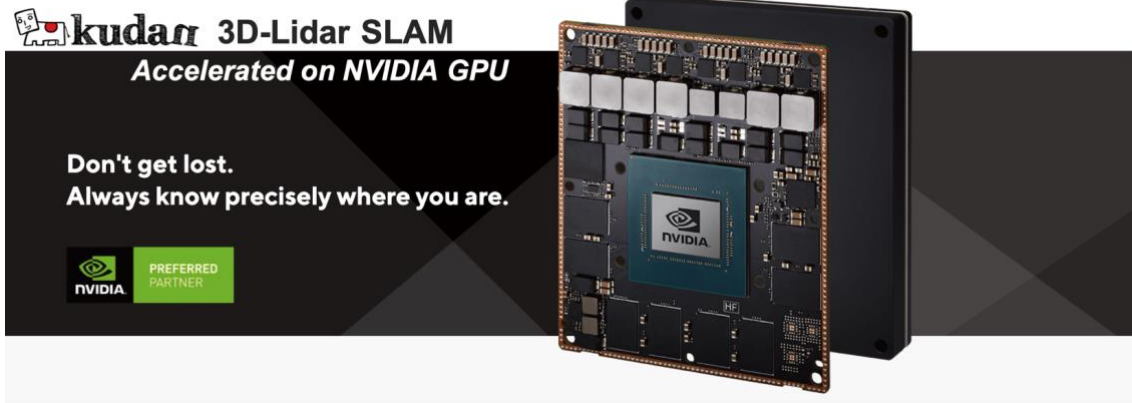July 28th, 2022

Kudan Inc.

Kudan releases its latest update on 3D-Lidar SLAM powered by the NVIDIA Jetson platform with up to 120% acceleration result

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Kudan Inc. (headquartered in Shibuya-ku, Tokyo; CEO Daiu Ko, hereafter "Kudan") is pleased to announce that Kudan is releasing a new version of 3D-Lidar SLAM that is optimized for the NVIDIA Jetson edge AI and robotics platform.

Kudan is a Preferred Partner in the NVIDIA Partner Network, working on autonomous mobile robot (AMR) applications with both Visual SLAM and 3D-Lidar SLAM. While a number of companies are developing their autonomous mobile machines using Kudan's SLAM software and the NVIDIA Jetson platform, this update is designed to help customers take full advantage of the Jetson platform's hardware capabilities, and Kudan's advanced lidar SLAM software.

Kudan's 3D-Lidar SLAM accelerated on NVIDIA Jetson brings significant value to AMR applications by freeing up processing capacity for other resource-intensive tasks and increasing overall stability. Thanks to the continuing 3D-Lidar price reductions and overall performance improvements, more and more robotics OEMs are evaluating 3D-Lidar SLAM for their localization requirements. However, given that some of the sensors generate more than 1 million points per second, processing SLAM with this amount of data in real-time can be a challenge. For academic and research purposes, it is possible to use a high-power computer to process 3D-Lidar SLAM but the cost can be prohibitive for large-scale production and adoption.

Kudan leveraged NVIDIA's math functions optimized for its CUDA architecture in the 3D-Lidar SLAM's pose estimation module to process data more efficiently on the GPU. This not

only accelerates the overall processing time but also offloads a considerable portion of the processing from the CPU. Kudan tested its performance on the NVIDIA Jetson AGX Xavier module using KITTI datasets, one of the most well-known open datasets for testing 3D-Lidar SLAM, and observed 120% acceleration compared to using only CPUs and 80% acceleration on a desktop system.

Result: Average Process frame rate of Kudan 3D-Lidar SLAM (Hz)

* CPU: Intel i5-3760 RAM: 16gb
GPU: NVidia 2070RTX 8gb OS: Linux Ubuntu 18.04
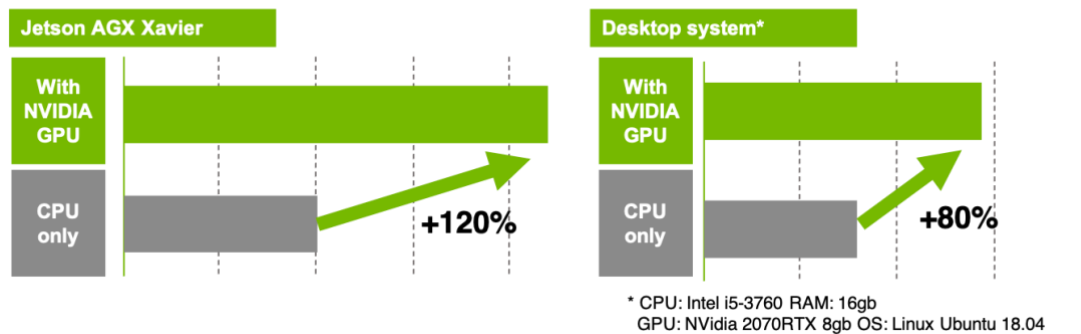
Kudan sees more acceleration opportunities for 3D-Lidar SLAM and also plans to implement similar acceleration for Visual SLAM on NVIDIA CUDA architecture. This series of efforts will benefit many robotics OEMs and users. Also, creating digital twins and accurate 3D point clouds in geospatial and general mapping applications are increasingly in high demand, where NVIDIA GPU-accelerated computing and Kudan 3D-Lidar SLAM shine together through NVIDIA's processing capability and Kudan's SLAM performance.

Please access this link for our previous release about Kudan's relationship with NVIDIA.

About Kudan Inc.

Kudan (Tokyo Stock Exchange securities code: 4425) is a deep tech research and development company specializing in algorithms for artificial perception (AP). As a complement to artificial intelligence (AI), AP functions allow machines to develop autonomy. Currently, Kudan is using its high-level technical innovation to explore business areas based on its own milestone models established for deep tech which provide wide-ranging impact on several major industrial fields.

For more information, please refer to Kudan's website at https://www.kudan.io/.

■Company Details

Name: Kudan Inc.

Securities Code: 4425

Representative: CEO Daiu Ko

■For more details, please contact us from here.