

In the spotlight

Line Spectral Estimation via Unlimited Sampling

IEEE Transactions On Aerospace And Electronic Systems

SUTD Authors: Zhang Qi, Soh De Wen

An Analog-to-Digital Converter (ADC) serves as a critical bridge between the analog and digital worlds, providing foundational data for various intelligent systems and devices. However, the dynamic range of conventional ADCs is limited, causing signal clipping and resulting in information loss.

To address this issue, researchers have recently proposed the concept of unlimited sampling, offering a novel framework to overcome the dynamic range limitations of conventional ADCs. In this work, we apply the unlimited sampling architecture to LFMCW radar systems and propose the USLSE algorithm, which is based on the dynamic programming method. We theoretically demonstrate the effectiveness of the proposed algorithm. Compared to other state-of-the-art algorithms, it exhibits superior noise robustness, making it more practical for real-world applications.



"We theoretically demonstrate the effectiveness of the proposed algorithm. Compared to other state-of-the-art algorithms, it exhibits superior noise robustness, making it more practical for real-world applications."

- Zhang Qi

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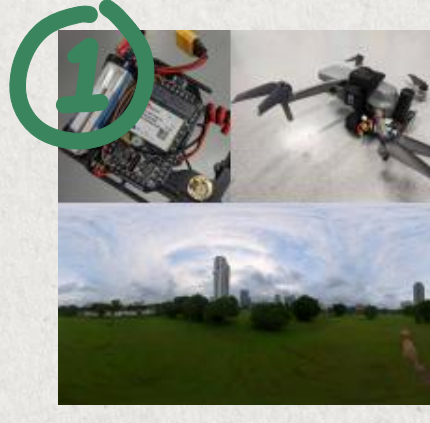
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SUTD Authors: Danial Sufiyan, Luke Soe Thura Win, Shane Kyi Hla Win, Tan U-Xuan, Foong Shaohui

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SUTD Authors: Takahiro Yamamoto

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SUTD Author: Dai Siyang, Liu Jun, Cheung Ngai-Man

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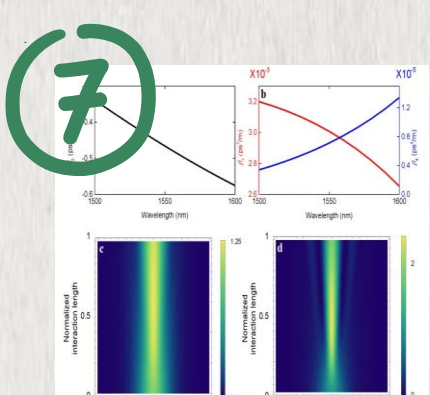


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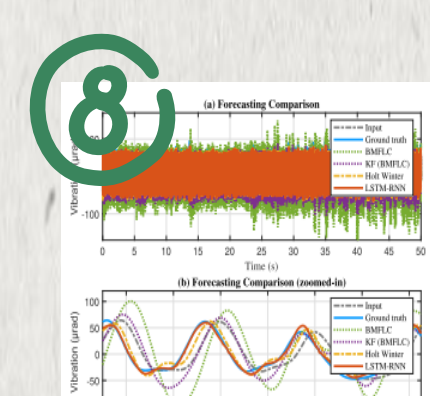


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Scientific Reports

SUTD Authors: Choi Ju Won, Sohn, Byoung-Uk, Gao Hongwei, Chen George F. R., Tan, Dawn T. H.

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IEEE-ASME Transactions On Mechatronics

SUTD Authors: He Yichang, Fan Yunfeng, Tan U-Xuan

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