On Mitigation of Ranging Errors for Through-the-Body NLOS Conditions using Convolutional Neural Networks

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Abstract—A UWB-based indoor localization is highly useful in various location-aware applications due to its high-precision and robustness in obstacles. However, it is still a challenging issue to mitigate ranging errors caused by non-line-of-sight (NLOS) conditions. In recent years, various approaches have been attempted using deep learning, but this is mostly the study of NLOS conditions by indoor obstacles. In this paper, we proposed a solution of ranging error mitigation for through-the-human body NLOS conditions using Convolutional Neural Networks.

Keyword—Ultrawideband (UWB), Ranging Error, Convolutional Neural Networks, NLOS Mitigation, Human Body NLOS.

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