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High-Precision Positioning Based on Carrier Phase and Unscented Kalman Filter in the Presence of Base Station Calibration Errors 1864
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Inter-Cell Interference Mitigation for Time of Arrival Estimation in LTE Positioning 1871
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ST-SAM: A Lightweight Satellite-Tailored Service-Adaptive Multicast TE Protocol 1876
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AI-Assisted NLOS Sensing for RIS-Based Indoor Localization in Smart Factories 1882
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Analysis of PAPR-Aware OFDM Waveforms for Integrated Sensing and Communication 1889
Eya Gourar, Yahia Medjahdi, Laurent Clavier, Abdul Karim Gizzini

Demo: Driver Gaze-Aware Adaptive LiDAR Sensing for Advanced Driver Assistance Systems 1895
Federico Scarì, Arkady Zgonnikov, Chen Quan, Nitin Jonathan Myers

Integrated Sensing and Communications for Unsourced Random Access: A Spectrum Sharing Compressive Sensing Approach 1897
Zhentian Zhang, Jian Dang, Kai-Kit Wong, Zaichen Zhang, Christos Masouros

On the Sensing Performance of FMCW-based Integrated Sensing and Communications with Arbitrary Constellations 1903
Daniel Gil Gaviria, Benedikt Geiger, Charlotte Muth, Laurent Schmalen

Design of Integrated Communication and Remote Sensing in LEO Satellite Systems 1909
Yichao Xu, Xiaoming Chen, Ming Ying, Zhaoyang Zhang

Joint Behavior and Location Recognition Framework Based on Electromagnetic Fingerprints 1915
Minmin Liu, Sijie Liu, Xuewen Liao, Dingxuan Chen

Movbeat: A Contrastive Learning Based Wifi CSI Sensing for Respiration Monitoring in Mobility Scenarios 1921
Yifan Feng, Peng Cheng, Shenghong Li, Hongze Liu, Geng Wang, Branka Vucetic, Yonghui Li

OTFS Sensing with SDR: Experimental Results and Analysis 1927
Muhammad Nauman, Lukasz Lopacinski, Nebojsa Maletic, Matthias Scheide, Jesús Gutiérrez, Milos Krstic Eckhard Grass

Receive MVDR Beamforming Improves Range-Velocity Estimation for Hybrid-Array MIMO-OFDM Radars 1933
Wei-Cheng Kao, Jwo-Yuh Wu, Shang-Ho Tsai, Tsang-Yi Wang

A High-Resolution Range Profile Estimation Method Based on Ofdm Communication Signals 1938
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A Multi-UAV Collaborative Positioning Algorithm for Ground Fake Base Station in Low-SNR Environment 1944
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An Efficient L-Shape Based Object Detection Using Density Distribution in LiDAR Point Cloud for Autonomous Driving 1950
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Semi-Self Representation Learning for Crowdsourced WiFi Trajectories 1957
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SHSNet: A Deep Learning Method for Static Human Sensing Using MIMO FMCW Radar 1962
Hongchun Li, Jun Tian, Qian Zhao, Lili Xie, Yingju Xia, Yoshiyuki Tsuyama, Takahiro Yoshioka Robin Orthey, Izumi Ikeda, Masaki Ishihara

On the Positioning Technique for Electric Vehicle Wireless Charging in SAE J2954 Standard 1968
Ziming He, Feng Chen, Guoxun Yang, Zhiquan Fu, Haoran Meng, De Mi, Zhen Gao, Bingpeng Zhou Yue Cao, Mehrdad Dianati

Characterization of Intra-Platoon V2V Links in Long Homogeneous Platoons 1974
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Cooperative Dual-Mode OFDM Index Modulation Based Downlink Multi-User NOMA System 1980
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Differential Delay Mitigation in Multi-Antenna Aircraft Transmissions 1985
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Enhancing 5G Resilience to Smart-Jammer Attacks: Incorporating Frequency Hopping to 5G 1990
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Experimental Outdoor Performance Evaluation of TVWS Narrowband Data Communication Using SDR Platform 1995
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Intent-Based Service Composition in 6G Cross-Chain Marketplaces: Leveraging Trust 2002
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Knowledge Distillation for Modulation Classification in Resource-Constrained Devices 2007
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Leveraging Contractive Autoencoders for Time-Efficient Rare Cyberattack Detection 2012
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Leveraging Large Reconfigurable Intelligent Surfaces as Anchors for Near-Field Positioning 2017
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