EAI ADHIP 2023 - 7th EAI International Conference on Advanced Hybrid Information Processing

Conference Date: 2023 September 22 – 24

Qihang activity center, Harbin Engineering University,

Harbin, China

Organizer: European Alliance for Innovation (EAI)

Undertaker: College of Information and Communication

Engineering, Harbin Engineering University

**EAI ADHIP 2023 - 7th EAI International Conference on
Advanced Hybrid Information Processing**

Conference Calendar Date: 2023 September 23

Location	Time	Event
Qihang activity center, Harbin Engineering University **Main Venue: Teacher Salon** **Online Conference Num:**		
Main Venue	**8:30-9:00**	**Opening Ceremony & Group Photo**
Main Venue	**9:00-9:50**	**Keynote Presentation**
Main Venue	**9:50-10:00**	**Question**
10:00-10:20		**Tea Break**
Main Venue	**10:20-11:10**	**Keynote Presentation**
Main Venue	**11:10-11:20**	**Question**
Lunch		
11:20-13:00		**Lunch**
Session 1 **Changjiang Hall**　　　　　　**Online Conference Num:**		
Changjiang Hall	**14:00-15:30**	**Academic Presentation**
15:30-15:50		**Tea Break**
Changjiang Hall	**15:50-17:20**	**Academic Presentation**
Session 2 **Huanghe Hall**　　　　　　**Online Conference Num:**		
Huanghe Hall	**14:00-15:30**	**Academic Presentation**
15:30-15:50		**Tea Break**
Huanghe Hall	**15:50-17:20**	**Academic Presentation**
Banquet		
18:00		**Banquet**

Conference Calendar Date: 2023 September 23

Location	Time	Event
Session 3		
Changjiang Hall		**Online Conference Num:**
Changjiang Hall	**08:30-10:00**	**Academic Presentation**
10:00-10:20		**Tea Break**
Changjiang Hall	**10:20-11:50**	**Academic Presentation**
Session 4		
Huanghe Hall		**Online Conference Num:**
Huanghe Hall	**08:30-10:00**	**Academic Presentation**
10:00-10:20		**Tea Break**
Huanghe Hall	**10:20-11:50**	**Academic Presentation**
Lunch		
11:20-13:00		**Lunch**
Session 5		
Changjiang Hall		**Online Conference Num:**
Changjiang Hall	**14:00-15:30**	**Academic Presentation**
15:30-15:50		**Tea Break**
Changjiang Hall	**15:50-17:20**	**Academic Presentation**
Session 6		
Huanghe Hall		**Online Conference Num:**
Huanghe Hall	**14:00-15:30**	**Academic Presentation**
15:30-15:50		**Tea Break**
Huanghe Hall	**15:50-17:20**	**Academic Presentation**
Banquet		
18:00		**Banquet**

Title: A Connected Sky: 6G communications for UAVs
Expert: Cesar Briso
Affiliation: Technical University of Madrid
Title: Professor

Abstract: The integration of UAVs into unify international air space requires the use of advanced communications with high-mobility communication platforms to provide line-of-sight links and further assist the terrestrial communications. 6G aims to provide ubiquitous wireless connectivity for the whole world. However, the demands for high-quality and ubiquitous wireless services impose enormous challenges to existing cellular networks. Unmanned aerial vehicles (UAVs), due to their agile maneuverability, can be dispatched as high-mobility aerial communication platforms to provide high quality links and further assist the terrestrial communications in 6G.Hence, integrating UAVs into 6G networks is a promising solution to achieve such goals. 6G calls for a paradigm on the design of both cellular and UAV communications systems due to the high altitude and mobility of UAVs, the unique channel characteristics of UAV-ground links; the asymmetric quality of downlink and uplink data transmission; weight and power limitations of UAVs; as well as the intra-system and inter-system interference of the integrated networks. In order to provide users with smooth service experience and improve the resource utilization of integrated UAVs and 6G networks.

Short bio: Cesar Briso is full professor and director of the Radiocommunications Group at the Technical University of Madrid, SPAIN. He has a 30 -year research trajectory, initially focused on the study and design of circuits and systems of high frequency and radar, and in the last 20 years he has focused on the design and development of wireless communications for transportation systems, especially focused on high speed trains, metropolitan railways and Unmanned aerial Vehicles. On 2010 he started working on wideband channel critical communications using 5G. On this topic he has done relevant research on the last years, making several scientific publications and collaborations with international experts of Europe, China and USA. He has managed 23 national and international research projects and hold two patents on critical communications for transportation systems. Now he is working on the project: "Next Generation Train Communications Systems", inside the Chinese program "The Belt and the Road". He is also author of 40 journal papers and has participated on more than 60 international congresses. He has been editor of 6 Special Issue and 2 books on wireless communications for transportation. He has received 4 National prizes for his research.

Title: Inverse synthetic aperture radar imaging of target with complex motions
Expert: Yong Wang
Affiliation: Harbin Institute of Technology
Title:　Professor

Abstract: Inverse synthetic aperture radar (ISAR) imaging of target with complex motion is very important and difficult in the field of radar imaging, and it has great value in practice. For the target with complex motion, the rotational velocity and rotational axis are time varying, and this will induce the time varying character for the Doppler frequency of the received signal. Thus, the traditional radar imaging algorithm will be inappropriate in this case, and the corresponding radar images will be blurred severely and can not be recognized correctly. Then, the received signal can be characterized as multi-component polynomial phase signal (PPS) for the target with complex motion, and the time frequency analysis for the PPS should be implemented to improve the radar image quality. This report will introduce three kinds of methods, including the parameters estimation, the time frequency representation and the signal decomposition technique for the treatment of multi-component PPS, and combined with the range instantaneous Doppler (RID) technique, the radar image quality can be improved significantly for the target with complex motion.

Short bio: Dr. Yong Wang is currently a professor with the institute of electronic engineering technology in Harbin Institute of Technology (HIT). His main research interests are in the fields of time frequency analysis of nonstationary signal, radar signal processing, and their application in synthetic aperture radar (SAR) imaging. Dr. Yong Wang has published more than 170 papers, and most of them appeared in the journals of IEEE Trans. On GRS, IET Signal Processing, Signal Processing, etc. He received the National Science Fund for Distinguished Young Scholars in 2023, and the National Natural Science Foundation for Outstanding Young Scholars in 2016, and received the Program for New Century Excellent Talents in University of Ministry of Education of China in 2012, and the Excellent Doctor's Degree nomination Award in China in 2010. He has been selected as the editorial boards for some famous journals, such as the　《Acta Electronica Sinica》, and he is also selected as the IET Fellow.

Session 1

Changjiang Hall   Date: 9.23

Time	Author	Title	Host	Note
14:00-14:10	JuanJuan Zou	Personalized Recommendation Method of Online Career Guidance Curriculum Resources Based on Collaborative Filtering		
14:10-14:20	Yong Ge	Tool Condition Monitoring and Maintenance Based on Deep Reinforcement Learning		
14:20-14:30	Yong Ge	Research on Control of Virtual and Real Drive System of Intelligent Factory Robot Based on Digital Twin		
14:30-14:40	Wenwei Li	Information Check and Control System of Substation Telemotor Based on Computer Vision		
14:40-14:50	Yu Zhao	Intelligent Fusion Method for College Students' Psychological Education Score Data Based on Improved Bp Algorithm		
14:50-15:00	Yi Liu	Optimal Planning Method of Rural Tourism Route Based on Multi Constraint and Multi Objective		
15:00-15:10	Honghong Chen	Vertical Search Method of Tourism Information Based on Mixed Semantic Similarity		
15:10-15:20	Zefeng Li	Retrieval Algorithm of Digital Information Resources for Legal Theory Teaching Based on Multi-scale Dense Network		
15:20-15:30	Mingjie Zheng	A Storage Method of Online Educational Resources for College Courses Based on Artificial Intelligence Technology		
		Tea Break		
15:50-16:00	Yan Liu	Allocation Method of Teaching Resources of Talent Training Course Based on Bp Neural Network		
16:00-16:10	Yanning Zhang	Anti Noise Speech Recognition Based on Deep Learning in Wireless Communication Networks		
16:10-16:20	Jia Pan	Acquisition Method of Direct Sequence Spread Spectrum Signal Based on Deep Residual Network		
16:20-16:30	Xinwei Li	A Secure Sharing Method for University Personnel Archive Data Based on Federated Learning		
16:30-16:40	Zheheng Liang	Research on Software Test Data Optimization Using Adaptive Differential Evolution Algorithm		
16:40-16:50	Xiaotang Geng	Personalized Scheduling of Distributed Online Educational Resources Based on Simulated Annealing Genetic Algorithm		
16:50-17:00	Xiaojing Wu	Accurate recommendation of personalized mobile teaching resources for piano playing and singing based on collaborative filtering algorithm		
17:00-17:10	Lingling Cui	Research on Fault Signal Reconstruction of Treadmill Equipment Based on Deep Neural Network		
17:10-17:20	Mingjie Zheng	Intelligent Library Educational Information Digital Resources Retrieval Based on Ant Colony Algorithm		

Session 2

Huanghe Hall   Date: 9.23

Time	Author	Title	Host	Note
14:00-14:10	Dan Wang	A Prediction Method of Students' Output and Achievement in Higher Vocational English Online Teaching Based on Xueyin Online Platform		
14:10-14:20	Zhipeng Chen	Classification Algorithm of Sports Teaching Video Based on Wireless Sensor Network		
14:20-14:30	Dan Wang	Monitoring Method of Students' Achievement of Curriculum Objectives in Higher Vocational English Online Teaching Based on Xueyin Online Platform		
14:30-14:40	Meiling Ou	Research on the Push of Online Teaching Resources for Innovation and Entrepreneurship Based on User Characteristics		
14:40-14:50	Xiaotang Geng	Method for Digital Resource Allocation in Mobile Online Education Based on Ant Colony Algorithm		
14:50-15:00	Chenyang Li	A Machine Learning Based Security Detection Method for Privacy Data in Social Networks		
15:00-15:10	JuanJuan Zou	An Online Integrated Classification Algorithm for Innovation and Entrepreneurship Teaching Data Based on Decision Tree		
15:10-15:20	Meiling Ou	High Quality Resources Sharing of College Students' Career Guidance Course Teaching Based on Decision Tree Classification Algorithm		
15:20-15:30	Hui Li	Evaluation of Word-of-mouth Influence of Cross-border E-commerce Products Based on Social Network Data Analysis		
		Tea Break		
15:50-16:00	Zimin Bao	A Remote Access Control Method for Electronic Financial Management Data Based on Object Attribute Matching		
16:00-16:10	Xiaoyan Xu	Research on Adaptive Tracking of University Funding Objects from the Perspective of Big Data		
16:10-16:20	Xiaoyan Xu	Research on Rapid Selection of University Funding Objects Based on Social Big Data Analysis		
16:20-16:30	Huibing Cao	Research on Personalized Push of Mobile Education Resources Based on Mobile Social Network Big Data		
16:30-16:40	Huibing Cao	Evaluation Method of Online Education Effect in Colleges and Universities Based on Data Mining		
16:40-16:50	Qiao Wu	Method for Integrating Sports Information Resources Based on Fuzzy Clustering Algorithm		
16:50-17:00	Hao Zhu	Research on Energy Consumption Data Monitoring of Smart Parks Based on IoT Technology		
17:00-17:10	Yanning Zhang	Design of a Multidimensional Teaching Effectiveness Evaluation System Based on Information Integration		
17:10-17:20	Xiaoli Wang	Evaluation Method of Higher Vocational Online Education Effect Based on Data Mining Algorithm		

Session 3

Changjiang Hall   Date: 9.24

Time	Author	Title	Host	Note
08:30-08:40	Jia Pan	Processing Method of Civil Radar Echo Signal Based on Kalman Filter Algorithm		
08:40-08:50	Jianming Wang	Frequency Offset Estimation of X-band Marine Radar Sampling Signal Based on Phase Difference		
08:50-09:00	Jianming Wang	Terrain Echo Signal Enhancement Technology of Marine Radar Based on Generalized Filtering		
09:00-09:10	Liang Pang	Design and Improvement of Airborne Ocean Radar Fault Detection Algorithm		
09:10-09:20	Lingling Cui	An Automatic Control Algorithm for Sampling and Timing of Civil Radar Signal Based on DSP		
09:20-09:30	Xin Zhang	Design of Control System for Constant Speed Variable Pitch Loaded Multi Axis Unmanned Aerial Vehicle Based on Lidar Technology		
09:30-09:40	Rong Zhang	Research on Railway Frequency Shift Signal Detection Based on Transient Electromagnetic Radar		
09:40-09:50	Rong Zhang	Multi Target Tracking Method for Rail Transit Crossing Based on Transient Electromagnetic Radar		
09:50-10:00	Xian Zhou	A Data Mining and Processing Method for E-commerce Potential Customers Based on Apriori Association Rules Algorithm		
Tea Break				
10:20-10:30	Bo Jiang	Design of English Mobile Online Education Platform Based on GPRS/CDMA and Internet		
10:30-10:40	Qiao Wu	Application of Artificial Intelligence Technology on Online Cultural Education Mobile Terminal		
10:40-10:50	Liang Zhang	College Psychological Mobile Education System Based on GPRS/CDMA and Internet		
10:50-11:00	Xiaoying Lv	Path Planning Method of Garbage Cleaning Robot Based on Mobile Communication Network		
11:00-11:10	Wenwei Li	Research on Electrical Equipment Status Monitoring Method Based on Wireless Communication Technology		
11:10-11:20	Bo Jiang	The Application and Research of Intelligent Mobile Terminal in Mixed Listening and Speaking Teaching of College English		
11:20-11:30	Hongbo Xiang	Research on Anti-interference Dynamic Allocation Algorithm of Channel Resources in Heterogeneous Cellular Networks for Social Communication		
11:30-11:40	Hongbo Xiang	Numerical Simulation of Dual Laterolog Response Based on Wireless Communication Technology		
11:40-11:50	Zhipeng Chen	Sharing Method of Online Physical Education Teaching Resources in Higher Vocational Colleges Based on Soa Architecture and Wireless Network		

Session 4

Huanghe Hall   Date: 9.24

Time	Author	Title	Host	Note
08:30-08:40	Shida Chen	Application of Intelligent Mobile Terminal in Virtual Building Construction Training Teaching		
08:40-08:50	Liang Pang	Numerical Simulation Model Construction of Swept Frequency Dielectric Logging Response Based on Wireless Communication		
08:50-09:00	Yanlan Huang	Sports Athlete Error Action Recognition System Based on Wireless Communication Network		
09:00-09:10	Fang Qian	Design of Adaptive Detection Algorithm for Mobile Social Network Security Vulnerability Based on Static Analysis		
09:10-09:20	Fang Qian	Dynamic Mining of Wireless Network Information Transmission Security Vulnerabilities Based on Spatiotemporal Dimension		
09:20-09:30	Hui Li	The Intelligent Monitoring System of University Personnel File Falsification Data Based on Wireless Network		
09:30-09:40	Liwen Liu	Research on Image Super Resolution Reconstruction Based on Depth Learning		
09:40-09:50	Shida Chen	Classification of Hyperspectral Remote Sensing Images Based on Three-Dimensional Convolutional Neural Network Model		
09:50-10:00	Yuan Wang	Texture Image Feature Enhancement Processing Method Based on Visual Saliency Model		
		Tea Break		
10:20-10:30	Wei Li	Interactive Sharing Method of Digital Media Image Information Based on Differential Privacy Protection		
10:30-10:40	Wei Li	A Hierarchical Smoothing Method for Animation Image Based on Scale Decomposition		
10:40-10:50	Liang Yuan	Video Image Based Monitoring Method for Operation Status of Internet of Things Network Equipment		
10:50-11:00	Liang Yuan	Design of Power System Remote Video Monitoring System Based on RTP Technology		
11:00-11:10	Yongchang Yao	RLE Algorithm Based Image Data Coding Method of Tujia Brocade Double Knitting Pattern		
11:10-11:20	Zefeng Li	A Blockchain Based Real-Time Sharing Method for Ideological and Political Mobile Education Resources		
11:20-11:30	Weiwei Zhang	Architecture Design of Employment Education Network Platform Based on Blockchain Technology		
11:30-11:40	Xiaoli Wang	Research on Blockchain Based Data Sharing of Teaching Resources in Higher Vocational Mobile Education		
11:40-11:50	Zimin Bao	Blockchain Based Logistics Tracking and Traceability Method for E-Commerce Products		

Session 5

Changjiang Hall   Date: 9.24

Time	Author	Title	Host	Note
14:00-14:10	Yi Liu	Personalized Recommendation Method of Rural Tourism Routes Based on Mobile Social Network		
14:10-14:20	Yan Liu	A Personalized Recommendation Method for English Online Teaching Video Resources Based on Machine Learning		
14:20-14:30	Honghong Chen	Personalized Recommendation Method for Tourist Attractions Based on User Information Mixed Filtering		
14:30-14:40	Jin-tian YIN	Monitoring Method of Permanent Magnet Synchronous Motor Temperature Variation Signal Based on Model Prediction		
14:40-14:50	Xinwei Li	Research on Personalized Recommendation of Mobile Social Network Products Based on User Characteristics		
14:50-15:00	Rong Yu	A Personalized Recommendation Method for Online Painting Education Courseware Based on Hyperheuristic Algorithm		
15:00-15:10	Xin Zhang	Reliability Analysis of Aeroengine Teaching System Based on Virtual Reality Technology		
15:10-15:20	Zheheng Liang	Research on Detection Method of Differential Code Coverage in Power Grid Information System		
15:20-15:30	Chao Ma	Intelligent Monitoring Method of Aircraft Swashplate Plunger Pump Fluidity Based on Different Working Conditions		
Tea Break				
15:50-16:00	Chunhui Liu	Design of Mobile Terminal Music Education Platform Based on Django Framework		
16:00-16:10	Xiaojing Wu	Construction of Mobile Education Platform for Piano Tuning Course Based on LogicPro Software		
16:10-16:20	Jin-tian YIN	Temperature Control Technology in Heating Room Based on Multi-channel Temperature Signal Denoising		
16:20-16:30	Bo Li	Research on Pedestrian Tracking in Urban Rail Transit Stations Based on Adaptive Kalman Filtering		
16:30-16:40	Yuansheng Chen	Badminton Flight Trajectory Location and Tracking Algorithm Based on Particle Filter		
16:40-16:50	Chen Zhao	Design of Substation Battery Condition Monitoring System Based on SDH Network		
16:50-17:00	Liwen Liu	Dynamic Tracking Method for Train Number of Rail Transit Signal System		
17:00-17:10	Bo Li	Centralized Monitoring System of Rail Transit Multiple Signals Based on Bus Technology		
17:10-17:20	Hao Zhu	Equilibrium Scheduling of Dynamic Supply Chain Network Resources under Carbon Tax Policy		

Session 6

Huanghe Hall   Date: 9.24

Time	Author	Title	Host	Note
14:00-14:10	Yuansheng Chen	Incremental Update Algorithm of Athlete Physical Training Information Under Dynamic Iterative Sampling		
14:10-14:20	Yu Zhao	Design of Mobile Education Platform for University Network Law Popularization Based on Streaming Media Technology		
14:20-14:30	Weiwei Zhang	Online Teaching Platform of Career Guidance Course Based on Virtual Reality		
14:30-14:40	Hai Huang	Intelligent Control Method of Indoor Physical Environment in Atrium under Social Information Network		
14:40-14:50	Chao Ma	Intelligent Monitoring Method for Static Comfort of Ejection Seat Based on Human Factors Engineering		
14:50-15:00	Liang Zhang	Design of Mobile Education Evaluation System for College Students Based on Digital Badge Technology -- Taking Legal Education as an Example		
15:00-15:10	Rong Yu	A Method of Resolving the Conflict of Shared Resources in Online Teaching of Design Professional Artworks Based on Feedback Integration		
15:10-15:20	Chen Zhao	Design of Substation Battery Remote Monitoring System Based on LoRa Technology		
15:20-15:30	Yongchang Yao	Optimization Scheduling Algorithm of Logistics Distribution Vehicles Based on Internet of Vehicles Platform		
Tea Break				
15:50-16:00	Yarong Zhou	Design of Logistics Information Tracking System for Petrochemical Enterprises under the Background of Intelligent Logistics		
16:00-16:10	Donge Zhou	Real Time Tracking of The Position of Intelligent Logistics Cold Chain Transportation Vehicles Based on Wireless Sensor Networks		
16:10-16:20	Donge Zhou	A Real Time Tracking Method for Intelligent Logistics Delivery Based on Recurrent Neural Network		
16:20-16:30	Yarong Zhou	A Real Time Tracking Method for Unmanned Traffic Vehicle Paths Based on Electronic Tags		
16:30-16:40	Yanlan Huang	Error Motion Tracking Method for Athletes Based on Multi Eye Machine Vision		
16:40-16:50	Yuan Wang	Research on Real Time Tracking Method of Multiple Moving Objects Based on Machine Vision		
16:50-17:00	Chenyang Li	A Method for Identity Feature Recognition in Wireless Visual Sensing Networks Based on Convolutional Neural Networks		
17:00-17:10	Xiaoying Lv	Feature Recognition of Rural Household Domestic Waste Based on ZigBee Wireless Sensor Network		
17:10-17:20	Chunhui Liu	A Method of Recognizing Specific Movements in Children's Dance Teaching Video Based on Edge Features		

College of Information and Communication Engineering

There are 140 staff members in the college, including 22 professors and 56 associate professors. 90 teachers have doctor degrees, accounting for 86% of the total number of full-time teachers. Among the teachers, there is one national famous teacher and three National level talents, one experts enjoying special government subsidies, and four provincial famous teachers.

Teachers of the college have made outstanding achievements in teaching and scientific research. They have successively won 2 National Excellent Teaching Teams, 1 National Excellent Course and 9 Provincial Excellent Courses, 1 National Teaching Achievement Award, 6 provincial first prize and 11 second prize, and published more than 100 academic monographs and textbooks. In recent years, the colleges has undertaken 48 National Natural Science Foundation projects, 7 Doctoral Program projects, more than 60 provincial and ministerial level scientific research projects, and nearly 300 other types of scientific research projects. The college has also achieved a number of achievements with international advanced level. There were 3 second prizes and 2 third prizes of National Science and Technology Progress, and 2 first prizes, 25 second prizes and 41 third prizes of provincial and ministerial science and technology progress. More than 2000 academic papers have been published, of which more than 1000 have been indexed in SCI, EI and ISTP.

While strengthening the basic education, the college pays attention to the cultivation of students' comprehensive quality, and strives to cultivate students' innovative consciousness and practical ability. Over the past few years, nearly 1000 students have participated in the academic competition, among them, more than 10 have won awards in the international competition, more than 100 have won the national first or second prizes, and more than 200 have won provincial awards. In previous academic competitions, the award-winning rate has reached more than 50%.