JING(MARY) MING

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EDUCATION

University of Electronic Science and Technology of China Sep. 2017 - Jul. 2020(expected)
M.S. in Signal and Information Processing
Overall GPA: 3.25/4
University of Electronic Science and Technology of China Sep. 2013 - Jul. 2017
B.S. in Electronic Information Engineering
Overall GPA: 3.91/4 Major GPA: 3.99/4 Ranking: Top 5%

PUBLICATIONS

Jing Ming, Xiaoling Zhang, Ling Pu, Jun Shi. "PSF Analysis and Ground Test Results of a Novel Circular Array 3-D SAR System". *Journal of Radars*, vol. 7, no. 6, pp. 770-776, Dec. 2018. doi: 10.12000/JR18068
Dejiao Ma, Xiaoling Zhang, Xinxin Tang, **Jing Ming**, Jun Shi, "A CNN-based Method for SAR Image Despeckling", accepted by *the 2019 IEEE International Geoscience and Remote Sensing Symposium*
Liming Zhou, Xiaoling Zhang, Jun Shi, Shunjun Wei, **Jing Ming**, Liang Li, Yangyang Wang, "An Autofocus Method for SAR Frequency-Domain Backprojection Imaging", accepted by *the 2019 IEEE Radar Conference*

PATENTS

Xiaoling Zhang, Xinxin Tang, Xingyue Zhang, **Jing Ming**, Jun Shi, Shunjun Wei, "Multichannel Uniformly Accelerated Trajectory SAR Moving Targets Two-Dimensional Velocity Estimation Method" Chinese Patent CN201910635378.1, applied Jul. 15 2019
Xiaoling Zhang, Xingyue Zhang, **Jing Ming**, Zhi Liu, Shunjun Wei, Jun Shi, Liwei Dang, "Adaptive Threshold based Compressed Sensing three-Dimensional SAR Imaging Method." Chinese Patent CN201910271426.3, applied Apr.4 2019

RESEARCH EXPERIENCES

Spaceborne Multi-baseline Interferometric SAR Technology Sep. 2018 - Present
National Key R&D Program of China *Research Assistent to Prof. Xiaoling Zhang*

- Conducted the multi-baseline interferometric processing on TerraSAR-X Image Data with MATLAB, achieved **1m resolution Digital Elevation Model of Barcelona international airport**
- **TerraSAR:** Constructed the baseline estimation model of spaceborne SAR satellite constellation to acquire precise unwrapped phase to DEM coefficient, executed successfully on simulated data and TerraSAR orbit data
- **TerraSAR:** Applied multibaseline graph-cut phase unwrapping method to obtain high-resolution unwrapped phases from strong discontinuous wrapped phase
- **Simulated Spaceborne SAR:** Proposed curved surface based backprojection SAR imaging algorithm to deal with the large scene DEM reconstruction, cutting the BP imaging grid with latitude-longitude coordinates
- **Simulated Spaceborne SAR:** Simulated the spaceborne tomographic SAR 3D imaging to recover the third-dimensional height from a group of BP 2D images based on the phase compensation accumulation thoery

Circular Array 3D SAR System Simulation and Ground Test Experiment Aug. 2018 - Jan. 2019
The National Natural Science Foundation of China *Research Assistent to Prof. Xiaoling Zhang*

- Proposed a circular array 3D SAR (CASAR) system, achieved **high-resolution 3D SAR imaging** and performed **effective side-lobe suppression capability**
- Derived the Point Spread Function (PSF) of CASAR, compared the simulated PSF under CASAR, LASAR and CSAR, demonstrated the advantages of CASAR constellation in 3D SAR imaging

- Invented the prototype CASAR experimental system, applied step frequency signal as transmit signal and vector network analyzer as signal tranceiver, constructed the outfiled experimental scene with 4 metal balls
- Deployed a single antenna to form array antenna by linear movement in the guide rail and constitute circular array by rotating the guide rail

SAR Echo Signal Digital Modeling & Performance Analysis Software Nov. 2017 - Sep. 2018
Cooperation Projects with Beijing HQ Radar Technologies Co.LTD *Research Assistent to Prof. Xiaoling Zhang*

- Accomplished the simulation and verification of spaceborne & airborne SAR echo signal generation and interferometric processing on MATLAB, built a framwork of simulation software
- Established the spaceborne SAR targets echo signal digital model with the input satellite orbit model, target scene model, antenna weighted model and phase error model
- Simulated the SAR imaging and interferometric processing with fast GPU-based back-projection SAR imaging algorithm, multiple phase unwrapping algorithms and terrain correction algorithm
- Introduced a performance evaluation function to calculate the PSLR, ISLR and IRW of the generated BP images

Back-projection Imaging Algorithm and Motion Error Compensation Sep. 2016 - Jun. 2017
Undergraduate Thesis *Supervised by Prof. Xiaoling Zhang*

- Designed an autofocus algorithm regarding the image intensity and image contrast to compensate the motion error and realized the high-quality SAR 2D imaging
- Built the echo signal model for side-looking stripmap SAR, applied BP algorithm to realize the 2D SAR imaging, constructed BP based motion error model and conducted the motion error simulation in SAR imaging process
- Published in the paper: An Autofocus Method for SAR Frequency-Domain Backprojection Imaging

RSSI based Positioning System Design May 2015 - Jun. 2016
UESTC Innovation and Enterprise Program *Supervised by Engr. Bo Chen*

- Improved the QDIP algorithm with distance weighted method and reduced the positional error by 20%
- Clarified the positional error sources of RSSI based positioning system, established the quadrilateral diagonal intersection positioning (QDIP) algorithm to increase information in locating
- Presented optimized distance weighted model to automatically select proper anchor nodes

HONORS & AWARDS

Academic Scholarship for Graduate Students, Second-class (Top 30%), UESTC	2019
Academic Scholarship for Graduate Students, Third-class (Top 50%), UESTC	2018
Freshmen Scholarship for Graduate Students, Fisrt-class (Top 20%), UESTC	2017
Excellent Undergraduation Dissertation (Top 5%), UESTC School of Electronic Engineering	2017
People's Scholarship for Undergraduate Students, Third-class (Top 30%), UESTC	2016
Mathematical Contest in Modeling of China, Second Prize of Sichuan (Top 8%), CSIAM	2015
People's Scholarship for Undergraduate Students, First-class (Top 6%), UESTC	2015
National English Competition for College Students, Second Prize in Level C (Top 3%), MOE of P. R. China	2014
National Scholarship (Ranking: 2/600), MOE of P. R. China	2014

SKILLS

Programming
MATLAB, C/C++, VHDL, HTML, LaTeX
Software
ENVI, SARscape, Multisim, ModelSim, Quartus II, PROTEL, SketchUp, EndNote
Standardized Tests
TOEFL 100 (Reading: 27, Listening: 28, Speaking 23, Writing: 22)
GRE 314 (Quantitative: 168, Verbal: 146, Analytical Writing: 3.5)