Cui Wenqing

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Education

Harbin Institute of Technology China,Weihai
Undergraduate in Electronic Information Engineering August 2019 – Present
Mentor: Professor Yan
GPA: 87.24/100

Honors and scholarships

Major Award (Top 3% students from my major.) 2020
Excellent Volunteer (by Committee of National Robot Competition) 2021
Outstanding Student Leaders (Top 3% students from all majors.) 2021

Publications

Handwriting Number Recognition Based on Millimeter-wave Radar with Dual-view Feature Fusion Network(Accepted)
Xiang Feng *, Tao liu, **Wenqing Cui**, Fengcong li, Yinan Zhao
Journal of Electronics & Information Technology, 2022, EI.

Radar Waveform Design with Cognitive Local Low Range Sidelobes Based on Particles Swarm Assisted Projection Optimization(Published)
Xiang Feng *, Fengcong Li, Zhanfeng Zhao, **Wenqing Cui**, Yinan Zhao
Remote Sensing, SCI ,JCR Q1.

Robust Phase-coded Waveform Design with Low Range Sidelobes Using Particles Filter Assisted Projection Method(Accepted)
Xiang Feng, Tao Liu, **Wenqing Cui**, Chaolin Zhang,et al.
International Conference on Information Communication and Signal Processing.

Radar composite waveform design with low range sidelobes based on particles sampling projection(Published)
Feng Xiang*, Li Fengcong, Fan Yu, Liu Tao, **Cui Wenqing**,et al.
Systems Engineering and Electronics, 2022, EI.

Research experience

JPEG Image Compression System(on MATLAB)
Details:This project makes an image compression system based on the JPEG compression standard. The image is firstly segmented, then DCT transformed, and then quantized according to the given quantization table. The DC component is differentially encoded, the AC component is run-length encoded, and the data is then Huffman encoded.This system will eventually output the compressed image and calculate the compression ratio.

Voice change processing system(on MATLAB)

Details:According to the short-term stationarity of the speech signal, the collected speech signal is processed frame by frame, the prediction coefficient is calculated by the linear prediction method (LPC), and the gene cycle is changed to achieve different voice changing effects. And compiled a GUI interface to integrate audio acquisition, spectrum analysis, voice-changing processing functions, and finally realized the voice-changing effects of children's voices, female voices, sloth voices, etc.

Digital Down-Conversion and Pulse Compression Based on Polynomial Filtering(on FPGA)
Details:Different from the traditional digital down-conversion method of mixing frequency, the digital down-conversion method based on multinomial filtering has better amplitude and phase consistency. The pulse compression can improve the range resolution accuracy and range resolution of the radar to the target. We simulated digital down-conversion and pulse compression in MATLAB and implemented them on FPGA.

Face recognition based on Machine Learning(on MATLAB)
Details:The project was done in two ways. The first approach uses principal component analysis (PCA) to extract feature faces from face sample sets. Fisher Linear Discrimination method is used for face classification and recognition. The second approach uses HOG operator to extract feature faces, and then uses multi-layer feedforward neural network to classify and recognize faces.

UAV pursuit system based on OPENMV
Details:Use PIXHAWK flight control hardware to build a four-axis UAV experimental platform. The UAV uses mini lidar and Optical Flow sensor to determine altitude and stabilize its position. The Hough circle change algorithm is used to identify the position of a specific shape, and a negative feedback control system is used to make the UAV hover over the specified target to achieve the function of tracking the target.

Skills

Programming
Proficient in: Matlab, C,LaTeX.
Familiar with: Verilog, Python.

Languages
English (**C1,IELTS:7.0**(Listening:7.5,Reading:8.5,Writing:6.5,Speaking:6.0))

Other interests

Basketball, Swimming, Photography, Video games..