Haidong Wang

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Education

Beihang University Beijing, China
M. Eng. in Information and Communication Engineering *Sept. 2016 - Present*

- GPA: 87.36/100
- Research Topic: Indoor Positioning
- Relevant Courses: Matrix Theory, Digital Signal Processing, Algorithm Design and Analysis, Satellite Navigation, Detection Estimation and Modulation Theory, Advanced Integrated Navigation Technology

Beihang University Beijing, China
B. Eng. in Electronic and Information Engineering *Sept. 2012 - Jul. 2016*

- GPA: 87.71/100
- Relevant Courses: Signals and Systems, Digital Signal Processing, Principles of Communication, The Foundation of Information Theory, Stochastic Process Theory, The Principles of Automatic Control, Image Signal Processing, Microcomputer Principle and Application, Network Security – Technology and Practice

Publications

[1] **Haidong Wang**, Li Cong and Honglei Qin, "**FM-Aided Heuristic Drift Reduction for Pedestrain Dead Reckoning Systems,**" *IEEE Sensors Journal*, 2018. (Accepted, DOI: 10.1109/JSEN.2018.2883502)

- Designed a random forest classifier to recognize turning and straight-line walking with FM and sensor data. Achieved overall classification accuracy of 96.5%.
- Devised a deviation elimination method for straight-line headings. Improved accuracy and stability of heading estimation.
- Improved 3σ positioning error by 52.1% than state-of-the-art method.

[2] Li Cong, **Haidong Wang** and Honglei Qin, "**An Environmentally Adaptive Positioning Method Based on Integration of GPS/DTMB/FM,**" *Sensors*, 2018. (Accepted)

- Integrated GPS, digital TV and FM signal to improve positioning accuracy in complex environment.
- Devised an adaptive mode selection method with fuzzy logic for optimal integration mode in tough environment.
- Improved 3σ error by 68.2% and 21.3% compared to GPS alone and GPS+DTMB correspondingly.

Research

Communication, Navigation and Test Laboratory, Beihang University Beijing, China
Research Assistant *Dec. 2015 - Present*

- Designed an indoor fingerprint positioning method by fusing WiFi and FM fingerprint. Reduced average error by at least 15.0% than either alone.
- Implemented an Android pedestrain positioning app and kept error within 4 m in 5-minute walk.
- Guided an Emirati student in English for one year on indoor positioning by integrating dead reckoning and WiFi fingerprinting. Completed implementation of PDR and WiFi positioning either alone.

Projects

SignatureAuth Project Beijing, China
Team Leader, Contest Project *Mar. 2015 - May 2015*

- Built an identity authentication system using support vector machine based on classification of pens' motion while signing names.
- Second Prize, "Feng Ru Cup" Competition of Academic and Technological Works, Beihang University, 2015.
- My contribution: coordinated team members, individually completed wavelet feature extraction, MATLAB GUI implementation and software debugging, participated in designing algorithm flow.

Digital Frequency Meter Design Beijing, China
Team Member, Contest Project *Aug. 2015*

- Designed and implemented a digital frequency meter with LCD display and ability of measuring frequency, period, interval and duty cycle.
- Second Prize, National Undergraduate Electronic Design Contest (Beijing Division), 2015.
- My contribution: individually implemented display control with ARM board, participated in system design and implementation of communication between ARM and FPGA.

Digital Image Processing Beijing, China
Individual, Course Project *Jun. 2015*

- Implemented image transformation, compression, restoration, segmentation, edge detection and feature extraction using MATLAB.

Honors & Awards

- **Outstanding Bachelor's Thesis Award**, Beihang University, 2016
- **Excellent Student Award**, Beihang University, 2013
- **First Prize**, Scholarship for Excellent Academic Performance, Beihang University, 2013

Skills

- **Programming:** Java, MATLAB, Python, C, C++, LaTeX.
- **Tool:** MATLAB, Android Studio, Linux.