Haidong Wang

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Education

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

- GPA: 87.38/100
- Relevant Courses: Matrix Theory, Digital Signal Processing, Satellite Navigation, Automatic Test Principles and Systems, Detection Estimation and Modulation Theory, Algorithm Design and Analysis, 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 Pedestrian 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%.
- Designed an accurate heading estimation method for straight-line periods.
- Improved 3σ positioning error by at least 52.1% than the state-of-the-art method in long time walking.

[2] Li Cong, **Haidong Wang** and Honglei Qin, "**An Environmentally Adaptive Positioning Method Based on Integration of GPS/DTMB/FM,**" *Sensors*, vol. 18, no. 12, pp. 4292, 2018. (DOI: 10.3390/s18124292)

- Integrated GPS, digital TV and FM signal to improve positioning accuracy in complex environments.
- Designed an integration mode selection method using fuzzy logic to adapt to different environments.
- Improved 3σ error by 68.2% and 21.3% compared to GPS alone and GPS+DTMB, respectively.

Research

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

- Designed an indoor fingerprint positioning method for the Bachelor's graduation project by fusing WiFi and FM fingerprint. Reduced average error by at least 15.0% compared to WiFi or FM alone.
- Implemented an Android pedestrian dead reckoning (PDR) software and kept error within 4 m during a 5-minute walk.
- Guided a Pakistani Master's student in English for over one year on indoor positioning by integrating PDR and WiFi fingerprinting. Completed the implementation of PDR and WiFi positioning.

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 when people sign their names.
- Second Prize, "Feng Ru Cup" Competition of Academic and Technological Works, Beihang University, 2015.
- Individual contribution: coordinated team members, independently completed wavelet feature extraction, implemented and debugged MATLAB GUI, participated in algorithm flow design.

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

- Designed and implemented a digital frequency meter with LCD display control and the ability to measure frequency, period, interval and duty cycle.
- Second Prize, National Undergraduate Electronic Design Contest (Beijing Division), Beijing Municipal Commission of Education, 2015.
- Individual contribution: implemented display control with ARM board, participated in system design, and implemented the 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

- **Second Prize**, Academic Scholarship, Beihang University   2017 & 2016
- **Outstanding Bachelor's Thesis Award**, Beihang University   2016
- **Third Prize**, National English Competition for College Students, Advisory Board for College Foreign Language Teaching, China   2015 & 2013
- **Excellent Student Award**, Beihang University   2013
- **First Prize**, Scholarship for Excellent Academic Performance, Beihang University   2013

Skills

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