Wugang Meng

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Education

- **Georgia Institute of Technology**
  Master of Science in Computer Science; GPA: 4.0/4.0 *Aug. 2021 - Expected Jan. 2023*
  Courses: *Artificial Intelligence, Robotics: AI Techniques, Operating Systems, Machine Learning, Probabilistic Models*
- **Harbin Institute of Technology**
  Bachelor of Engineering in Electrical and Electronics; GPA: 3.33/4.0 *Sep. 2015 - July 2019*
  Courses: *Signals and Systems, Wireless Localization, Advantage Electronic Technology, Deep Learning Technology*

Programming Skills

- **Languages**: Python, C/C++, Julia, Bash Shell Script
- **Tools**: ROS, Matlab, Qt, STM32, Pytorch, Caffe

Projects

- **Human Motion Behavior Detector** Georgia Institute of Technology
  Assistant engineer, Associate with Dr. Zhaolin Zhang *Sep. 2021 - Mar. 2022*
  - **Radar Database**: Measured seven types of postures of three men and two women with body mass index (BMI) between 18 and 29 using a single-transmission, single-receiver millimeter-wave radar array and built a database of 2800 labeled samples.
  - **ReLU-ELM**: Built ReLU Extreme Learning Machine by Pytorch, which can classify the time-frequency spectrum for different human behavior.
- **Intelligent Perception System** Harbin Institute of Technology
  Assistant engineer, Supervised by Prof. Yinan Zhao *Dec. 2018 - Apr. 2021*
  - **High-speed mm-wave Radar Data Interface**: Designed a driver based on Linux kernel for millimeter-wave radar that transports multi-channel high-speed Intermediate Frequency signals from DSP to 3-D PointCloud processing program.
  - **Graph-SLAM Algor based on mm-wave Radar Data**: Demonstrated the influence of RF signal parameters on the information matrix in SLAM Algorithm, and implement it in Online Graph-SLAM.
  - **MCL Algorithm based on mm-wave Radar Data**: Using the environment velocity measured by radar, implemented a fast converging Monte Carlo Localization Algorithm by Particle Filter with velocity discrimination.
- **ALWAYS Cup 2017 Formula Student Autonomous** Harbin Institute of Technology Racing Team
  Engineer, Perception Group *Aug. 2016 - Oct. 2017*
  - **Formula Racing Decision System**: Implemented a navigation algorithm based on the A* algorithm and the BellmanFord dynamic planning algorithm on static global maps and dynamic local maps.
  - **High Resolution ToF Sensor**: Written a driver and user interface by Qt for the 3D sensor OPT8241. Solve the low angular resolution of traditional single-line Li-DAR.
  - **Multi-sensor Fusion Perception System**: Utilized ROS to achieve a multi-sensor fusion localization navigation with LIDAR, ToF sensor and IMU.

Publications

- **Application of Multi-angle Millimeter-wave Radar Detection in Human Motion Behavior and Micro-action Recognition**: MEASUREMENT SCIENCE and TECHNOLOGY.
- **Human Behavior Recognition Method Based on CEEMD-ES Radar Selection**: The 2021 CIE International Conference on Radar December, 15-19th, 2021, Haikou, China

Experience

- **Georgia Institute of Technology (Shenzhen Campus)** Shenzhen, Guangdong
  Teaching Assistant *Aug. 2021 - Now*
  - **Fall21 CS6601 Artificial Intelligence**: On-campus course for Shenzhen students. Involved in creating assignment solution demos and exam materials and conducting recitation sessions. The online version on Udacity and Online Master had more than 1000 students enrolled.
- **Harbin Institute of Technology (Weihai Campus)** Weihai, Shandong
  Research Assistant *Jul. 2019 - May. 2021*
  - **Intelligent Perception System**: Intelligent Perception System is a part of National High-tech R&D Program. Worked on robot platform construction and wireless localization and navigation algorithm.
  - **RoboMaster**: The RoboMaster University Series (RMU) is a platform for robotic competitions and academic exchange founded by Da-Jiang Innovations (DJI) and specially designed for global technology enthusiasts. Instructed undergraduates to build intelligent robot algorithms for competition.
- **TH Technology** Weihai, Shandong
  Radar Engineer *Jul. 2019 - Jan. 2021*
  - **THR-S600**: THR-S600 is a box-type speed detection radar with high accuracy and fast response. It is widely used as a speed detection equipment in the Chinese campus. Worked on 2-D FFT velocimetry algorithm.
  - **THR-LD**: THR-LD is a 24G millimeter wave speed/diagonal radar chip. Adopting array aperture antenna technology, it has high bandwidth and narrow beam. Worked on Multi-channel data fusion, 3-D PointCloud signal construction.