WEIHAN WANG

https://www.linkedin.com/in/weihan-wang-811239116 ◇ https://github.com/wwtx9
Tel: 573-554-6534 ◇ e-mail: weihan.wang@vanderbilt.edu ◇ Nashville, TN, 37205
Personal website: https://wwtx9.github.io/weihanwang/

EDUCATION

Vanderbilt University, Nashville, Tennessee Aug.2017 - Oct.2019
M.S. in Computer Science GPA: 3.7/4.0
Thesis: RGB-D Simultaneous Localization and Mapping (SLAM) Application

University of Missouri, Columbia, Missouri Aug.2015 - May.2017
B.S. in Computer Science (Honor Scholar and Cum Laude) GPA: 3.6/4.0

TECHNICAL SKILLS

Languages C, C++, Python, Swift
Frameworks OpenCV, Eigen, Sophus, g2o, Pangolin, ROS, Tensorflow

WORK EXPERIENCE

Shenzhen Peng Cheng Laboratory (Chinese Key Laboratory) Dec.2019 -
SLAM Algorithm Engineer *Shenzhen, China*

· In the development of a robust client-server cooperative Visual SLAM system with cloud-based optimization for processing complex optimization tasks at a fast speed.
· In the development of Mixed Reality Products using Visual Inertial SLAM with multiple sensors.

Shenzhen Peng Cheng Laboratory Jun.2019 - Sep.2019
Research Intern *Shenzhen, China*

· Developed a state-of-the-art Stereo Visual-Inertial SLAM system .

- Realized Visual-Inertial alignment, Visual-Inertial system initialization.
- Implemented local window based tightly-coupled Visual-Inertial system optimization.

Model-Based Embedded Systems Laboratory at Vanderbilt University Nov.2018 - June.2019
Research Assistant *Nashville, TN*

· Developed a real-world Reinforcement Learning (RL) based Adaptive Cruise Control (ACC) system .

- Applied deep RL algorithms to train the controller of the vehicle.
- Developed a Loadable Kernel Module (LKM) enabling the communication between vehicle motor and computer.
- Implemented Kalman Filter between Inertial Measurement Unit (IMU) and speed transmitter for velocity calibration.
- Deployed the system onto the F1/10th race car.

SELECTED PROJECTS

RGB-D Simultaneous Localization and Mapping Application
(CMake, ROS, OpenCV, Eigen, Sophus, g2o, PCL) Jan.2019 - Oct.2019

· Implemented extrinsic camera calibration, feature extraction, feature matching and pose estimation.
· Applied visual odometry, back-end graph optimization and sparse mapping.
· Implemented and tested algorithms on the F1/10th race car.

Moving Object Detection and Tracking
(CMake, ROS, OpenCV) Feb.2018 - May.2018

· Implemented color-based object detection algorithms for images and videos.
· Deployed and tested the object detection algorithms on the F1/10th race car with Nvidia TK1 board with PID control.

NLP Application
(Python, Tensorflow, Scikit-Learn) Feb.2018 - May.2018

· Designed and implemented a news and email classification model via Convolutional Neural Networks(CNN), collected data set from THUC and BBC News and Vanderbilt Email list and obtained a classification accuracy of 97%.

Voice-Controlled Lamp
(Python, Swift) Nov.2017 - Dec.2017

· Implemented a voice-controlled lamp using Raspberry Pi via IBM Watson speech-to-text API.

WorldTrekker
(Swift, Coredata, MapKit) Apr.2016 - May.2016

· Implemented a virtual travel App that transports the users virtually around the world through their daily fitness.
· Applied MapKit to plot virtual route as well as image view and collection view to show scenery and route information.
· Applied Coredata to store and visualize the real-time fitness progress of users.
· Realized the function of sharing the daily progress of users through social media.

LEADERSHIP

iOS Development Club Dec.2016 - May.2017
President & Founder *Columbia, MO*

· Instructed iOS application design using SDK, Xcode, and Swift language.

PUBLICATIONS

· Weihan, Wang, Junhong Chen. *A Robust Client-Server Cooperative Visual SLAM System with Cloud-Based Optimization*, plan to submit to IROS 2020 (International Conference on Intelligent Robots and Systems).
· Weihan, Wang. *Appearance of a radiogoniometry system for exercise simulation and training*, Patent, CN201820 225910.3 Feb 2018.
· Weihan, Wang. *Simultaneous Localization and Mapping in Mixed Reality* (popular science article), Ta Kung Pao (Hong Kong), Sep.3, 2019.