Jie Yuan

Email : yuanjielovejesus@gmail.com
Site: https://penguinflys.github.io/penguinflys/about
Mobile : +49 15224073254
Address: Hannover, Germany

Education

- **Leibniz University Hannover** — Hanover, Germany
  Master of Science in Navigation and Field Robotics (interdisciplinary); Grade: 1.7 — *Oct. 2017 – Feb. 2021*
- **China University of Mining and Technology** — Xuzhou, China
  Bachelor of Engineering in Geodesy and Geoinformatics; GPA: 3.57/4.0 (6/157) — *Sept. 2013 – July. 2017*

Experience

- **Institute of Photogrammetry and Geoinformation at Leibniz University** — Hanover, Germany
  Object Detection Developer (Student Assist) — *May. 2019 - Apr. 2020*
  - **Object Detection**: Object detection algorithms YOLO, SSD, RetinaNet, Faster-RCNN on aerial images
  - **Algorithm Development**: Developing Rotated Faster-RCNN on aerial images
- **Institute of Cartography and Geoinformatics at Lebiniz University** — Hanover, Germany
  GUI Developer for HD Mapping system (Student Assist) — *Feb. 2018 - Sep. 2018*
  - **3D Scene**: Reconstruction of a fused 3D scene of point cloud and binocular camera
  - **GUI Design**: Design Interfaces for each tabs with multiple threads

Projects

- **Panoptic Segmentation in Urban Area with Aerial Imagery** — 2020
  Object Detection; Semantic Segmentation; Instance segmentation — *Individual*
  - **PanUrban Dataset**: Development of aerial image dataset in panoptic level based on semantic dataset
  - **Segmentation and Detection**: Development of a neural network specialized on aerial images.
  - **Result**: PQ with 54, AP with 50+ on PanUrban dataset.
- **Vehicle Tracking and Motion Prediction with KFs** — 2019
  Object tracking; Deep learning; Kalman Filtering; C++ — *Individual*
  - **Object Extraction**: 3D bounding box with fusion of lidar and camera
  - **Motion and Measurement**: CTRA model with Radar/Lidar Update
- **Dynamic Landmark based Visual Odometry** — 2019
  SFM; VIO; SLAM; 3D Reconstruction; Matlab; Python — *Team*
  - **Keypoints based VIO**: Motion reconstruction with keypoints in RANSAC framework with epipolar constraint
  - **Sparse Map Reconstruction**: Keypoints reprejection to local 3d coordinate system by stereo configuration
  - **Pose Fusion**: Pose Fusion with preceding vehicle broadcasted pose
- **LiDAR-based Georeferencing of Kinematic Multi-Sensor-Systems** — 2018
  Map Alignment; Georeferencing; IEKF; Matlab — *Team*
  - **Point Cloud to Map**: Assignment of points to building facades (plains) and lanterns (poles)
  - **Measurement Updating**: Car pose optimization by IEKF with implicit constraint
- **LEGO Robot Courier Simulation** — 2017
  Mobile Robot; Sensor Fusion; SLAM; Embedded System; C++; ROS; CMAKE; OpenCV — *Team*
  - **Motion Model**: 2D differential drive kinematics
  - **Observation model**: ICP on Lidar; Global localization with external camera
  - **Mapping and Path Planing**: 2 dimensional grid map and A* algorithm with cost map

Skills

- **Programming Languages** — *C++, Python, Matlab, HTML, etc.*
- **Tech Stacks** — *ROS, PCL, OpenCV, OpenGL, PCL, Eigen, g2o, ceres, Pytorch, Qt5, etc.*
- **Tools** — *CMAKE, Docker, WSL, Git, SSH, MS Office, Latex, Cloud Service, etc.*
- **Speaking Languages** — *English(C1), German(B2-C1), Chinese(C2).*