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EDUCATION BACKGROUND

Technische Universität München, Germany (Master)   **2021.10 – 2023.09**

Cartography Program, **Scholarship of Cartography in TU Munich for 1st, 2nd Semester**

École polytechnique, France (Master Exchange program)   **2022.01 – 2022.03**

Algorithmique parallèle et distribuée (Parallel and distributed algorithms)

Wuhan University, China (Bachelor)   **2017.09 – 2021.06**

遥感科学与技术(Remote Sensing Science and Technology – Geographic Information Engineering Track)

- Wuhan University Scholarship [2017 2018]
- Wuhan University Elite Student [2017 2018]
- S and H prize of MCM/ICM [2018 2019]
- Third prize of Mathorcup University Mathematical Modeling Competition [2019]
- Second prize of China International Mathematical Modeling Competition [2019]
- H prize of Asia and Pacific Mathematical Contest in Modeling [2019]
- **Excellent Bachelor Graduate Thesis of Wuhan University [2021]**

WORK EXPERIENCE

✧ **General Motors Cruise LLC., Cruise Munich**   **2022.10 – 2023.09**

- Support for the radar simulation for modeling of advanced radar systems for autonomous applications.
- Help in generating support tools for e.g. the conversion of the USD format for radar simulation tool usage.
- Integration of GPU acceleration into the inhouse radar simulation tool chain as well as improved usage of third-party libraries integrated in this radar simulation tool chain.

✧ **Environmental Systems Research Institute, Inc. (ESRI), R&D Center (Beijing)**   **2021.04 – 2021.08**

- Prepare data for the experiment, Data pre-processing.
- Develop and optimize medical digital image processing algorithms in spatial/frequent domains.
- Assist to develop the NodeJS backend server for the project.

✧ **Wuhan University (Academician of CAS, Prof. Gong, Jianyan; Prof. Qin, Kun)**   **2021.03 – 2021.06**

Assist in teaching and schoolwork tasks of the course *Foundation of Geographic Information System*.

✧ **ISIP Lab, Wuhan University (Prof. Qin, Kun)**   **2020.09 – 2021.06**

- Research the complex network theory based on the flight network and correlated datasets.
- Assist to develop the NSFC platform for displaying network relationship via frontend development.
- Assist to apply for National Natural Science Foundation of China.

RESEARCH EXPERIENCE

1. Temporal remote sensing image detection of natural disasters   2023.03 – 2023.05

Utilizing generative and discriminative networks to learn from specific region's disaster-free (normal) remote sensing time-series images, and subsequently discriminate disaster features and regions in the affected images.

Github: *https://github.com/hinczhang/Temporal-Remote-Sensing-Image-Detection-of-Natural-Disasters (temporarily private repo)*

2. Drone surveillance video anomaly detection   2022.07 – 2022.11

Use generative and discriminative networks to carry out self-supervised anomaly detection, which could be applied on the wild scenes and for urgent rescue.

Paper: *Pu Jin, Jiongyan Zhang, Lichao Mou, Xiao Xiang Zhu. UAV-Anomaly: Anomaly Detection in UAV Videos. ISPRS journal of photogrammetry and remote sensing, in press.*
Github: *https://github.com/hinczhang/Drone-Surveillance-Video-Anomaly-Detection (temporarily private repo)*

3. Research on the relationship between COVID-19 and the global flight network   2020.04 – 2021.06

Analyse the impact of the epidemic situation on the flight network in 2020. Based on the characteristics of the flight network from January to April in 2020, we use the complex network theory to extract the network patterns.

4. Development of travel assistance app for the disabled   2020.04 – 2020.11

The project attempts to use barrier-free data in Wuhan, providing guidance for the disabled to travel.

5. Research on indoor positioning and navigation   2019.07 – 2020.07

The project aims to developing an indoor positioning and navigation system in a large shopping mall by using as few external hardware as possible. I am responsible for deploying algorithms on the central server.

6. Research on Night-time Remote Sensing   2018.04 – 2019.04

Based on the remote sensing data of night-time light obtained by DMSP / OLS system, this project analyses the development status of emerging cities in recent years.

COURSE PROJECTS

3D Scanning & Motion Capture	Algorithmique parallèle et distribuée
https://github.com/hinczhang/3D-Scanning-and-Motion-Capture	*https://github.com/hinczhang/INF560*
Implement Multiview Stereo and bundle adjustment via C++ (with help of OpenCV and ceres).	Use MPI, OpenMP and CUDA to parallelize the Barnes Hut algorithm for the n-body problem.
Machine learning for 3D Geometry	**Graduate Thesis**
https://github.com/hinczhang/Machine-Learning-for-3D-Geometry	*https://github.com/hinczhang/Graduate-Thesis*
Combine Morphing and Sampling Network and SoftPool++ (As encoder) to operate 3D completion.	Use the complex network theory to analyze the flight network and use RNN to predict the flight.
Pattern Recognition	**Comprehensive Practise of GIS**
https://github.com/hinczhang/ObjectRec	*https://github.com/hinczhang/OSPyQGIS*
Use YOLOv3 and DNN of OpenCV along with QT to develop a camera GUI to recognize objects.	Develop a Plug and Play software based on QGIS and PyQT with the plugin function.

TECHNOLOGY STACKS

1. The Programming Languages I usually use: JavaScript, C/C++, Python, Java

2. The Framework I usually use: Vue, Android, OpenCV, MPI, OpenMP, QT, CUDA, Flask, PyTorch, SQL.

3. The Technology I like: 3D, Deep Learning, Modelling, Computer Vision, Parallelism, Fullstack Dev.