Ziqi Zhao

Research interest: Machine learning, Adversarial robustness, Model compression, Wi-Fi sensing

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Education

- **École polytechnique fédérale de Lausanne (EPFL),** *Lausanne, Switzerland* **2020.9-now**
  MSc in **Computer Science,** current GPA: **5.46/6**
- **École polytechnique fédérale de Lausanne (EPFL),** *Lausanne, Switzerland* **2019.2-2019.7**
  Exchange student in **Computer Science**, GPA: **5.58/6**
- **Hong Kong University of Science and Technology (HKUST),** *Hong Kong SAR, China* **2016-2020**
  BSc in **Computer Science** and **Mathematics (General Math Track)**
  First class honor, GPA: **3.62/4.3,** 1st Major GPA**: 3.79/4.3**(Computer Science), 2nd Major GPA: **3.61/4.3**(Mathematics)

Recent Research Experience

- **Quantized Neural Networks for 6D Pose Estimation (EPFL)** **2022.8-now**
  - Apply state-of-the-art quantization algorithms to 6D pose estimation models
  - Evaluate the sensitivity of different parts of the network against quantization
- **Pushing the limits of optical character recognition on complex multilingual documents (EPFL)** **2022.2-2022.6**
  - Train a new Greek OCR model with our ancient Greek commentary dataset.
  - Finetune an existing Greek OCR model with our dataset and achieve the best performance.
  - Apply data augmentations to the dataset to further improve performance.
- **Network Pruning in Adversarial Training (EPFL)** **2021.2-2022.10**
  - Design a new algorithm to prune a randomly initialized network and achieve adversarial robustness simultaneously.
  - Compare the new algorithm with SOTA methods of robust network pruning with/without network quantization.
- **Wi-Fi geo-fencing with network embedding (HKUST)** **2020.3-2021.1**
  - Design a novel and robust algorithm for identifying whether people go out of a predefined geo-fence.
  - Help collect the data from various settings.
  - Conduct a wide range of experiments
- **Indoor Crowdsourced Wi-Fi fingerprinting with network embedding (HKUST)** **2019.7-2020.7**
  - Design a novel algorithm to build up an indoor Wi-Fi fingerprinting system with high deployment efficiency.
  - Conduct extensive experiments to evaluate the performance of the system.
- **Personalized Running Speed Estimation using Foot Inertial Sensor (EPFL)** **2019.2-2019.6**
  - Implement a running speed personalization model with machine learning
  - Analyze the major features that can contribute most to the model and implement several models for comparison.

Publications

Note: * indicates equal contribution.

- Chen Liu*, Ziqi Zhao*, Sabine Süsstrunk, Mathieu Salzmann. "Robust Binary Models by Pruning Randomly-initialized Networks". *Advances in Neural Information Processing Systems (NeurIPS) 2022.* [Arxiv], [OpenReview], [Code]
- Weipeng Zhuo, Ziqi Zhao, Ka Ho Chiu, Shiju Li, Sangtae Ha, Chul-Ho Lee, S.-H. Gary Chan. "GRAFICS: Graph Embedding-based Floor Identification Using Crowdsourced RF Signals". *IEEE International Conference on Distributed Computing Systems*, 2022. [Paper], [Code]
- Jiajie Tan, Edmund Sumpena, Weipeng Zhuo, Ziqi Zhao, Mengyun Liu, S.-H. Gary Chan. " IoT Geofencing for COVID-19 Home Quarantine Enforcement". *IEEE Internet of Things Magazine, Volume3, Issue3, September 2020.* [Paper]

Work Experience

- **Ketl.io**, Summer Internship, *Geneva, Switzerland* **2021.7-2021.9**
  - Develop a web crawler to scrape and parse online documents
  - Create a pipeline for text translation and summarization
  - Finetune the translation and summarization models with corpus in the legal domain.

Skills

- **Programming skills:** Mainly use Python, familiar with Matlab, Java, Scala, and C++
- **Machine learning:** Mainly use PyTorch, familiar with Tensorflow, and HuggingFace