Lili Liu

Email : lili.jemma.liu@gmail.com Location: Greater Vancouver, BC, Canada.
Mobile : +1-514-677-9909
Objective: Machine Learning Engineer (Full-time).

Skills

- Machine/Deep Learning, Autonomous Driving, Model Compression and Foundation Models.
- Python, Linux shell script, C/C++, Assembly language, and SQL.
- Pytorch, Tensorflow, Caffe, and Hardware deployment.
- OpenCV, Scikit-learn, Numpy, Pandas, ONNX and Git.

Work experience

- **Machine Learning Engineer** Huawei Vancouver Research Center
  Big data and cloud platform *June.2022-Present*
  - **Application, Optimization, and Fine-tuning of Foundation Models:**
    1. Developed the auto-labeling tools by fine-tuning the vision foundation model (SAM, SEEM, Mask-Dino etc), achieving state-of-the-art segmentation performance on autonomous driving fisheye datasets.
    2. Implemented dataloader, training, validation, and visualization code from scratch for fine-tuning foundation model with prompts (bounding box and text).
    3. Delivered models to Headquarter with about 10% improvement in hard cases scenarios, earning new customer trust and securing two additional orders for Vancouver team.
  - **Model Compression: Large Models and Neural Networks**
    1. Researched model compression techniques to accelerate and validate next-generation AI chip design, covering pruning, 2:4 sparsity, SparseGPT, quantization, and knowledge distillation.
    2. Designed and implemented a comprehensive pruning framework to automate the compression process (operate models defination, checkpoints, and datasets).
    3. The framework achieved up to 90% reduction in model size across three datasets by utilizing seven pruning methods and four process types, and deployed optimized neural networks onto the Ascend-910 chip.

- **Associate Machine Learning Engineer** Huawei Vancouver Research Center
  HiSilicon-NLP team *May.2021-June.2022*
  - **Sign Language Dataset Creation and Analysis:**
    1. Created a specialized multimodal dataset for sign language translation, enabling effective recognition and generation of sign language words and avatars for both hearing and deaf individuals when conducting banking transactions.

Education and Research experience

- **Concordia University** Montreal, Canada
  Thesis Master, Computer Science *Sep. 2018 – Dec. 2020*
  Hand-drawn image analysis RA, CENPARMI Research Lab

- **Beijing University of Technology** Beijing China
  Master of Engineer, Computer Technology. *Sep. 2015 – Jul. 2018.*
  Time series EEG data classification RA, Key Laboratory of Trust Computing