WUCHEN (AUBREY) LI

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EDUCATION

Cornell University at Cornell Tech, New York, NY — Aug. 2024-Present
Dual Master of Science in Information Systems and Applied Information Science – Health Tech Concentration
Relevant Coursework: Machine Learning Engineering, HCI & Design, AI in Healthcare
Honors/Awards: Cornell Tech Merit Scholarship

ShanghaiTech University, Shanghai, China — Aug. 2018-Jun.2022
Bachelor of Engineering in Computer Science and Engineering
Relevant Coursework: Software Engineering, Database System, Algorithm & Data Structure, Optimization & Machine Learning

TECHNICAL SKILLS

Coding Language:	Python, SQL, Shell Scripting, C++, C, RISC-V
Tools & Frameworks:	Git, GitHub, Docker, Linux, PyTorch, TensorFlow, Unity, Blender, OpenCV, ITK-SNAP, SLURM
Professional Tools:	PostgreSQL, Greenplum, CPLEX, Pandas, Figma, Tableau BI, FineBI, Excel

EXPERIENCE

Florens Asset Management Company, COSCO Group, Data Analyst, Shanghai, China — Sept. 2022-Jul. 2024

- Managed the **data mid platform** by building and maintaining Data Warehouse Detail (DWD) **models** such as inventory, idling analysis, and leasing revenue models. Delivered **40+** data products (reports and dashboards) that supported data-driven decisions, improving inventory management and reducing shipping container idle time by **15%**.
- Developed an automated system for **asset selection** using Python, SQL, and **CPLEX**, optimizing financing processes. The system reduced asset selection time from days to **10 minutes**, covering **90%** of the selection process and supporting faster bank negotiations. Overcame scalability issues, handling **millions** of financeable assets and translating complex, non-linear financing criteria into mixed integer linear programming (MILP) questions.
- Led **AI initiatives** to automate **container return process** using **LLM** and **computer vision**. Designed and implemented a **MaskRCNN-based** system focused on detecting floor and wall damages in containers from survey images, achieving **95%** accuracy. This automation significantly reduced manual review time and addressed **50%** of repair costs. Additionally, used LLM to automate customer email processing for booking returns, streamlining workflows and improving operational efficiency.

Intel, Software Engineer Intern, Shanghai, China — Nov. 2021-Feb. 2022

- Contributed to **DeepRec**, an **open-source** recommender project with Alibaba, focusing on BST, DIEN, and DSSM models. Improving BST model AUC performance by incorporating BF16 and self-attention module for better sequence embedding.
- Integrated Intel's LSTM **PyTorch operator** with the dgemm matrix multiplication package, achieving a **3.5 times** speed improvement in end-to-end inference, seamlessly integrated into Alibaba's recommender system.

PROJECTS

MICCAI: Semi-Supervised Tooth Segmentation (Python, nnUNet, ITK-SNAP) — Jul. 2023-Sept. 2023
Research Project: Developed 3D CBCT tooth segmentation models for the MICCAI 2023 challenge.

- Models: Enhanced **nnUNet** model with additional encoding layers for better feature extraction and generalization. Developed a **two-stage** training strategy with maxilla-mandible position prediction, **data smoothing**, and **pseudo-labeling**.
- Results: Ranked **FIRST** and present at MICCAI 2023 workshop. Achieved a 0.844 Dice score and 0.866 IOU on the test data.
- Key Challenges: Addressed **limited dataset**, reduced **metal artifact reduction** via synthetic data and two-stage training.

Meta Tensor – Deep Learning Framework (Python, NumPy) — Jan. 2022-Dec. 2022
Personal Project: Developed a **customized deep learning framework** from scratch using Python and NumPy.

- Developed key components: Computational Graphs, Fully Connected Layer, Convolutional Layer, and Pooling Layer, with loss functions like Perception Loss, Log Loss, and Cross-Entropy with SoftMax Loss. Integrated advanced optimizers including Gradient Descent, Momentum, AdaGrad, RMSProp, and Adam optimizers.
- Key Challenges: Overcame complexities in designing dynamic computational graphs and achieving optimization stability across different models and tasks.

EXTRACURRICULAR ACTIVITIES

Hobbies & Interests: Practicing **Kendo** for over 6 years and holding a second dan rank, **fencing** (saber) for more than 2 years, a passionate **table tennis** player, and dedicated to maintaining an active lifestyle through regular gym workouts.

CERTIFICATION

MICCAI 2023 STS 3D CBCT Segmentation Challenge | Ranked $\mathbf{1}^{st}$ out of 466 teams — Jul. 2023-Sept. 2023