XIAOMIN LI

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EDUCATION

Texas State University, USA *August 2018 - June 2023*(Estimated)*
Ph.D. Candidate, Intelligent Multimodal Computing and Sensing (IMICS) Laboratory GPA 4.0/4.0
Lanzhou University, China (National Ranking: 30) *September 2014 - June 2018*
Bachelor of Engineering in Computer Science GPA: 4.48/5, Ranking: 10/82

TECHNICAL STRENGTHS

Languages	Python, C++, C, Java, Bash, C#, SQL, GLSL/HLSL
Framework & Tools	TensorFlow, PyTorch, Docker, AWS, Matlab, CUDA, OpenMP, OpenGL
Knowledge	Machine Learning, Time Series Data Analysis, Computer Vision, High-Performance Computing, Parallel Processing, Computer Graphics

SELECTED PUBLICATIONS

- **Xiaomin Li**, Vangelis Metsis, Huangyingrui Wang, and Anne Hee Hiong Ngu. TTS-GAN: A Transformer-based Time-Series Generative Adversarial Network. The 20th International Conference on Artificial Intelligence in Medicine (AIME), Halifax, Canada, June 2022.
- **Xiaomin Li**, Vangelis Metsis. SPP-EEGNET: An Input-Agnostic Self-supervised EEG Representation Model for Inter-Dataset Transfer Learning, The 18th International Conference on Computing and Information Technology, Kanchanaburi, Thailand, May 2022.
- **Xiaomin Li**, Cody Blakeney, and Ziliang Zong. Transfer Learning with Fine-Grained Sparse Networks: From an Efficient Network Perspective, Resource-Constrained Machine Learning (ReCoML) Workshop of MLSys2020 Conference, Austin, TX, USA, 2020.
- Cody Blakeney, **Xiaomin Li**, Yan Yan, and Ziliang Zong. Craft Distillation: Layer-wise Convolutional Neural Network Distillation, IEEE International Conference on Edge Computing and Scalable Cloud (EdgeCom), New York City, USA, 2020.
- Cody Blakeney, **Xiaomin Li**, Yan Yan, and Ziliang Zong. Parallel Blockwise Knowledge Distillation for Deep Neural Network Compression, IEEE Transactions on Parallel and Distributed Computing, Dec. 2020
- Brad Evermana, Narmadha Rajendrana, **Xiaomin Li**, and Ziliang Zong, Improving the Cost Efficiency of Large-scale Cloud Systems Running Hybrid Workloads - A Case Study of Alibaba Cluster Traces, Journal of Sustainable Computing, Oct. 2020.

PROFESSIONAL EXPERIENCE

Machine Learning Intern - Ford Motor Company *June - Aug. 2021 (12 weeks)*
Autonomous Vehicle IXPerception Research Group
Project Name: Efficient video-based object detection for smart infrastructure using motion embedding from Eccentricity Analysis
Discription: Developed an efficient video-based moving object detection pipeline based on image eccentricity and sparse convolution. The image eccentricity algorithm has been used as a fast background subtraction method. Built an object detection model based on sparse convolutions and it achieves 2x speedup on processed foreground images with negligible accuracy loss.
Outcomes: Poster Presentation on Ford Global Control Conference Proceedings 2021
Patten ID 84410502 (Pending)

TEACHING ASSISTANT EXPERIENCE

Introduction to Machine Learning *2021 Spring* **Introduction to Computer Vision** *2020 Fall*
Operating System *2018-2020 Academic Year* **Object Oriented Design** *2018 Academic Year*

SELECTED PROJECTS

Real-Time Foveated Rendering GPU Energy Consumption Analysis *September 2018 - May 2019*

- Implemented two foveated rendering algorithms with forward and deferred rendering pipeline on the game engine, Unity. Measured the CPU and GPU power consumption of the rendering process. Results showed that foveated rendering can significantly reduce rendering computation load and save energy with minor impact on user experience.

Parallelizing Fractal Problem with MPI, OpenMP, and CUDA *January 2019 - May 2019*

- Fully utilized the machine computation resources in a distributed system to generate Fractal images in parallel. MPI was used to distribute total frames on multiple nodes. On each node, parts of the frames were assigned to GPUs, used CUDA to parallelize, and the others went to CPUs, used OpenMP to parallelize. The overall results achieved linearly speed up as the number of nodes increased.

Improving Rendered Low Resolution Image Quality Based on GAN *January 2019 - May 2019*

- Created a dataset with multiple computer-generated images under different lightings, numbers of objects, and sizes. Used Super-Resolution Generative Adversarial Networks(SRGAN) to repair computer-generated lower resolution images. The proposed method can scale up image resolutions by 4 times with negligible differences comparing to ground truth images.

SELECTED AWARDS

Doctoral Instructional Assistantship *2018-2021 Academic Year*
Computer Science Graduate Academic Excellence Award *2020 Academic Year*
Doctoral Merit Scholarship *2018 Academic Year*