Yilin Sun

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Education

Shanghai Jiao Tong University September 2020 – June 2024
B.Eng in Computer Science and Technology, Artificial Intelligence Shanghai, China

- Grade 91.11/100, GPA 3.81/4.00, Rank 7/88
- Selected Courses: Operating Systems, Computer Architecture, Computer Networks, Database Systems, Convex Optimization, Machine Learning, Computer Vision, Data Struture and Algorithm Design

Internship Experience

ByteDance, Ltd. June 2023 – Now
Routing System Backend Development Intern, SD-RTN Team Shanghai, China

- Developed **Region-Specified Routing** for Software Defined Realtime Transport Network by utilizing BGP and threeline IDC as **forwarding network blocks**, which reduced packet loss rate and network latency caused by surging network traffic at edge hosts during peak hours.
- Implemented **Route Switch Manager** for automatic path switching by maintaining multiple forwarding routes, which provided imperceptible route switching for upstream services.

Academic Experience

ReArch Lab, CS department, SJTU January 2022 – Now
Sparse Neural Network Research Assistant Advisor: Prof. Jingwen Leng

- Researched various sparsity patterns for implementation of algorithm-software co-designed sparse neural network pruning method that achieves latency speedups on dense architectures.

Generalized Deep 3D Shape Prior via Part-Discretized Diffusion Process CVPR 2023
Y. Li, Y. Dou, X. Chen, B. Ni, **Yilin Sun**, Y. Liu, F. Wang Advisor: Prof. Bingbing Ni

- Assisted in the implementation of a 3D shape generation neural network based on generative diffusioin model by plugging in off-the-shelf models for our multimodality(text-based) network pipeline.
- Improved **VQ-VAE** to map geometric forms to a more compact encoding space, combined **CRF** and **PointerNet** for text-guided shape generation framework to improve the quality of generated objects.

Course Projects

Bit Torrent April 2023 – May 2023
P2P File Distribution Network Computer Networks Project

- Reimplemented a P2P file distribution network according to the **Bit Torrent** application layer protocal. Utilized **tracker-peer protocal** to manage hosts in the system. Designed **piece manager** to ensure file integrity by **chunkified hash encoding**. Used **rarest first strategy** to boost file distribution with rarity and load balance.

ChCore October 2022 – December 2022
Micro Kernel Operating System Operating Systems Project

- Completed the functions of a micro kernel OS under ARM architecture which supported multi-core; physical and virtual memory management with multi-level page table, buddy system and SLAB; thread scheduling and IPC; synchronization with mutex, conditional signal and semaphore.

LC3 Simulator November 2021 – December 2021
Instruction Level Assembler for LC3 ISA Computer Architecture Project

- Implemented an assembler for LC3 ISA and tested with programs written in assembly language.

Deep Learning Relevant Projects Focused on **dataset building** and **function enhancement**

- **regionalized-3v3-snakes**: CNN feature engineering for snake game with MARL strategy.
- **spiking-NN-image-generation**: Introduced spiking neural networks into traditional GAN architecture and tested with adversarial samples based on FGSM and PGD methods.
- **COCO-Cityscape-synthesizer**: Automatic image synthesizer of OOD dataset for downstream tasks.
- **gaze-estimation-feature-extrator**: Facial feature extrator for gaze estimation.

Skills

Programming Languages: Golang, Python and C++
Tech Skills: Software Defined Networks, Relational Database Systems, Key-Value Storage Systems, Cloud Computing and Message Services, Deep Learning Frameworks

Updated on August 11, 2023