Yilin Sun

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Education

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

- Grade
- Selected Courses: Operating Systems, Computer Architecture, Computer Networks, Database Systems, Convex Optimization, Reinforcement Learning, Data Mining, Natural Language Processing

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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 on dedicated lines caused by surging network traffic at edge hosts during peak hours.
- Implemented **Route Switch Manager** for automatic path switching by querying cluster metadata and adjusting **path priority criteria** according to upstream task requirements, which provided **imperceptible route switching** to high quality lines for upstream services.
- Improved **Public Network Alert Strategy** for netblock-level path calculation failure by establishing **multi-level cross-regional** tags in **Metrics** database system and setting warning segmentation with **Argos** platform, which enabled fine-grained alert for downstream public network probing interface.
- (WIP)Nunc sed pede. Praesent vitae lectus. Praesent neque justo, vehicula eget, interdum id, facilisis et, nibh. Phasellus at purus et libero lacinia dictum. Fusce aliquet. Nulla eu ante placerat leo semper dictum. Mauris metus. Curabitur lobortis. Curabitur sollicitudin hendrerit nunc. Donec ultrices lacus id ipsum.

Research Experience

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

- Implemented a 3D shape generation neural network based on generative diffusion model by plugging in off-the-shelf models for our multimodality(text-based) network pipeline.
- Enhanced **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.

Selected Course Projects

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

- Reimplemented a P2P file distribution network by the **Bit Torrent** protocol. Utilized **tracker-peer protocol** 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.

Deep Learning Toolkits   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.

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