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 */100, GPA */4.00, Rank */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 and adjusting **path priority criteria** according to upstream tasks requirments, 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)Routing strategy adjustment for domestic and international netblocks to prevent packet loss and cross-regional video conference failure issue.

Academic 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
- 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 by the **Bit Torrent** 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 Simulator under LC3 ISA   Computer Architecture Project

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