

# Yilin Sun

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## Education

### Shanghai Jiao Tong University

B.Eng in Computer Science and Technology, Artificial Intelligence

September 2020 – June 2024

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 Structure and Algorithm Design

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## Internship Experience

### ByteDance, Ltd.

Routing System Backend Development Intern, SD-RTN Team

June 2023 – Now

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) Routing strategy adjustment for domestic and international netblocks to prevent packet loss and cross-regional video conference failure issue.

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## 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 diffusion 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.

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## Course Projects

### Bit Torrent

P2P File Distribution Network

April 2023 – May 2023

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

Micro Kernel Operating System

October 2022 – December 2022

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

Instruction Level Assembler Simulator under LC3 ISA

November 2021 – December 2021

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-extractor**: Facial feature extractor for gaze estimation.

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## 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 September 28, 2023