



## Sun Guangda 孙广大

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- GitHub: [sgdxbc](https://github.com/sgdxbc) (research) / [whoiscc](https://github.com/whoiscc) (personal)

## Education

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- Bachelor's degree from Xian JiaoTong University (2020)
- Ph.D student at National University of Singapore (2020-)

## Interests

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Research topics: building faulty tolerance systems both inside data centers and in the wild planet scale networks. Previous works discovered various topics in networking.

Get used to: Rust, Python, C, Java, JavaScript, LaTex, asynchronous programming, network programming, Gurobi, Terraform, Vue, compiler frontend, interpreter, memory allocator / garbage collection, Stack Overflow.

Learning: Coq, P4, Haskell, model checking, simulation, physically based rendering, data processing, zero knowledge proof.

Have been playing piano and listened to electronic music for a long time. Favorites: Chopin / (early) Deadmau5.

## Works

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### NeoBFT

Equip programmable switches with cryptographics and use them to improve ordering performance of BFT protocols.

**Guangda Sun**, Mingliang Jiang, Xin Zhe Khooi, Yunfan Li, Jialin Li

*NeoBFT: Accelerating Byzantine Fault Tolerance Using Authenticated In-Network Ordering* [pdf](#)

SIGCOMM '23, doi: 10.1145/3603269.3604874

Repository: [nus-sys/neobft-artifact](#)

## LemonNFV

Efficient run-to-complete network function virtualization that is as robust as process-level isolated solutions.

Hao Li, Yihan Dang, **Guangda Sun**, Guyue Liu, Danfeng Shan, Peng Zhang

*LemonNFV: Consolidating Heterogeneous Network Functions at Line Speed* [pdf](#)

NSDI '23

Repository: [ants-xjtu/neptune](#).

## Rubik

Generate protocol stack implementation of standard/modded protocols for network functions with a versatile model and minimal code.

Hao Li, Yihan Dang, **Guangda Sun**, Changhao Wu, Peng Zhang, Danfeng Shan, Tian Pan, and Chengchen Hu

*Programming Network Stack for Physical Middleboxes and Virtualized Network Functions* [pdf](#) ToN '24, doi: 10.1109/TNET.2023.3307641

Hao Li, Changhao Wu, **Guangda Sun**, Peng Zhang, Danfeng Shan, Tian Pan, Chengchen Hu

*Programming Network Stack for Middleboxes with Rubik* [pdf](#)

NSDI '21

Repository: [ants-xjtu/rubik](#).

## CODER

Universal, state machine based immediate representation for network programming and the compilation toolchain around it.

Hao Li, Peng Zhang, **Guangda Sun**, Wanyue Cao, Chengchen Hu, Danfeng Shan, Tian Pan, Qiang Fu

*Compiling Cross-Language Network Programs Into Hybrid Data Plane* [pdf](#)

ToN '22, doi: 10.1109/TNET.2021.3132303.

Hao Li, Peng Zhang, **Guangda Sun**, Chengchen Hu, Danfeng Shan, Tian Pan, Qiang Fu  
*A Modular Compiler for Network Programming Languages* [pdf](#)  
CoNEXT '20, doi: 10.1145/3386367.3432063

Hao Li, Peng Zhang, **Guangda Sun**, Chengchen Hu, Danfeng Shan, Tian Pan, Qiang Fu  
*An Intermediate Representation for Network Programming Languages* [pdf](#)  
APNet '20, doi: 10.1145/3411029.3411030

Repository: [ants-xjtu/sidfam-v3](#).

## Projects

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### Neatworks

Academic research purposed networking codebase in Rust.

- Repository: [neatsys/neatworks](#)

### Shift Saver

Editor extension that translate pressing space key into holding shift key, for typing camel case or underscore identifiers without involving little fingers.

- Repository: [whoiscc/shift-saver](#)
- Marketplace: [Shift Saver](#)
- [Video](#)

Last revised on Jul 20 2024. Online version of this CV is on <https://github.com/sgdxbc>.