



## Sun Guangda 孙广大

- Email: guangda@u.nus.edu
- GitHub: [sgdxbc](#) (research) / [whoiscc](#) (personal)

## Education

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

## Interests

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

**Learned.** 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 listening to electronic music for a long time. Favorites: Chopin / (early) Deadmau5.

# Works

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](#)

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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](#)

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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](#)

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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

Academic research purposed networking codebase in Rust.

**Repository** [neatsys/neatworks](#)

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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](#) / [PDF](#)