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Xinliang David Li

David is a Principal Engineer at Google. He manages the Compiler Optimization Team and leads the effort to generate the fastest possible code for Google's data center softwares. His research interests include highly scalable cross module optimizations, scalable profile guided optimizations (instrumentation, PMU sample, trace-based), memory hierarchy optimizations (data and instructions), micro-architecture optimizations, post link optimizations, and ML based optimization frameworks.

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Chaitanya Mamatha Ananda • Rajiv Gupta • Mahbod Afarin • [Sriraman Tallam](#) • Han Shen • [David Li](#) •
LCTES (Languages, Compilers, Tools and Theory of Embedded Systems) (2026) (to appear)

AI-PROPELLER: Warehouse-Scale Inter-Procedural Code Layout Optimization with AlphaEvolve

Chaitanya Mamatha Ananda • Rajiv Gupta • [Mircea Trofin](#) • Aiden Grossman • [Sriraman Tallam](#) • [David Li](#) •
[Amir Yazdanbakhsh](#) • 2026

Necro-reaper: Pruning away Dead Memory Traffic in Warehouse-Scale Computers

[Sotiris Apostolakis](#) • [Chris Kennelly](#) • [David Li](#) • [Parthasarathy Ranganathan](#) •
Proceedings of the 30th ACM International Conference on Architectural Support for Programming
Languages and Operating Systems, Association for Computing Machinery (2025)

Automatic Synthesis of Specialized Hash Function

Renato B Hoffmann • Leonardo G Fae • Fernando Magno Quintao Pereira • [David Li](#) • Dalvan Griebner • 2025

PreFix: Optimizing the Performance of Heap-Intensive Applications

Chaitanya Mamatha Ananda • Rajiv Gupta • [Sriraman Tallam](#) • Han Shen • [David Li](#) •
CGO 2025: International Symposium on Code Generation and Optimization, Las Vegas, NV, USA (to appear)

Propeller: A Profile Guided, Relinking Optimizer for Warehouse-Scale Applications

Han Shen • Krzysztof Pszeniczny • Rahman Lavaee • [Snehasish Kumar](#) • [Sriraman Tallam](#) • [Xinliang David Li](#) •
ACM, pp. 617-631

Learning Branch Probabilities in Compiler from Data center Workloads

Easwaran Raman • [Xinliang David Li](#) • (2022)

automemcpy: A framework for automatic generation of fundamental memory operations

[Guillaume Chatelet](#) • [Chris Kennelly](#) • Sam Xi • [Ondrej Sykora](#) • [Clement Courbet](#) • [David Li](#) •

MLGO: a Machine Learning Guided Compiler Optimizations Framework

Mircea Trofin • Yundi Qian • Eugene Brevdo • Zinan Lin • Krzysztof Choromanski • Xinliang David Li • (2021)

ThinLTO: Scalable and incremental LTO

Teresa Johnson • Mehdi Amini • Xinliang David Li • IEEE Press, pp. 111-121

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