

Zining He

Computer Science Undergraduate

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Technical Skills

Languages	C++, Rust, Python, Java
AI Systems	PyTorch, CUDA, Huawei CANN, GPU/NPU operator testing, MoE inference profiling
Formal	Lean, specification synthesis, proof- and test-based verification
Systems	Operating systems, computer architecture, Linux, Git

Education

Shanghai Jiao Tong University	2024.09 – 2028.06
B.S. in Computer Science and Technology	

Research Experience

SpecBridge: Natural Language to Lean Specifications	2026.03 – Present
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Undergraduate Research Assistant | NeurIPS 2026 submission, third author

- Built a reconstruction-guided pipeline that translates natural-language requirements and fixed signatures into Lean specs.
- Designed NLFP planning and multi-layer validation with Python checks and Lean proof obligations, improving CLEVER results by 6.1/15.2/28.4 percentage points over few-shot + CoT baselines.

Cross-Architecture Operator Differential Testing	2026.02 – Present
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Undergraduate Research Assistant

- Developed a CUDA/CANN differential testing pipeline to compare neural-network operator semantics and support GPU/NPU reliability debugging.

Adaptive Acceleration for MoE Large Language Models	2026.01 – Present
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Project Member | SJTU Undergraduate Innovation Practice Program

- Designed adaptive expert allocation using gate scores, layer importance, attention, and token activations for MoE inference.
- Profiled Qwen1.5-MoE and DeepSeek-V2 with PyTorch hooks and MMLU scripts; reduced latency by 12% on Qwen1.5-MoE prefill and 5% on DeepSeek-V2 token generation.

Intent-Based Test Case Generation	2025.09 – 2025.12
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Undergraduate Research Assistant

- Converted structured and semantic testing intents into executable tests for targeted coverage and bug finding.