

DeepComputing

Enabling Intelligent Media Playback on RISC-V - Running VLC

July 2025

Yuning Liang

Founder

a core software guy

Java VM (J2ME) / Static Compiler (MIPS' Open64)

People who are really
serious about
software should make
their own hardware.

Alan Kay

Company Confidential: Please do not distribute.

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Who are we and What we do

RISC-V Premium Product Pioneer Focusing on

- Consumer Electronics
- Modern Personal Computing Devices
- And Some RISC-V Run & Fun Gadgets



DC-ROMA RISC-V Laptops/Pad



fedora
remix

2023

4-core 1.5GHz

8GDDR



2024

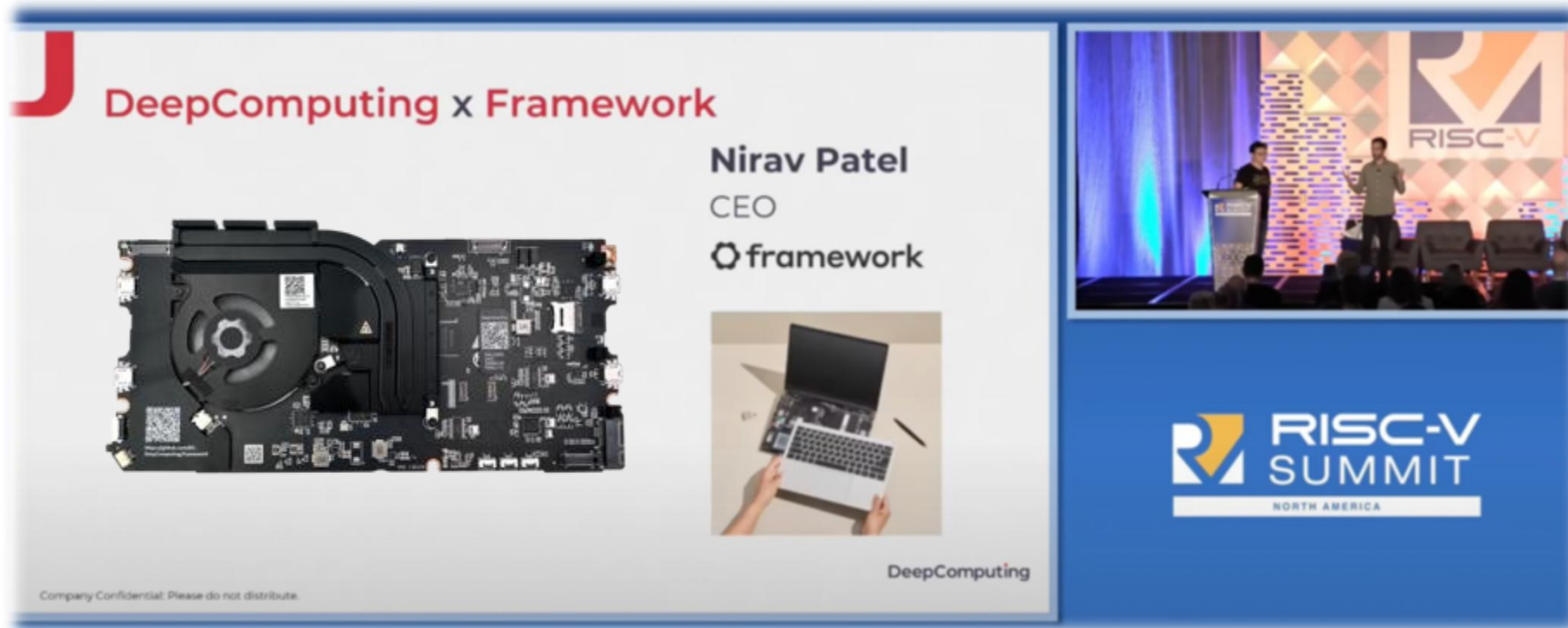
8-core 1.75GHz

16G DDR



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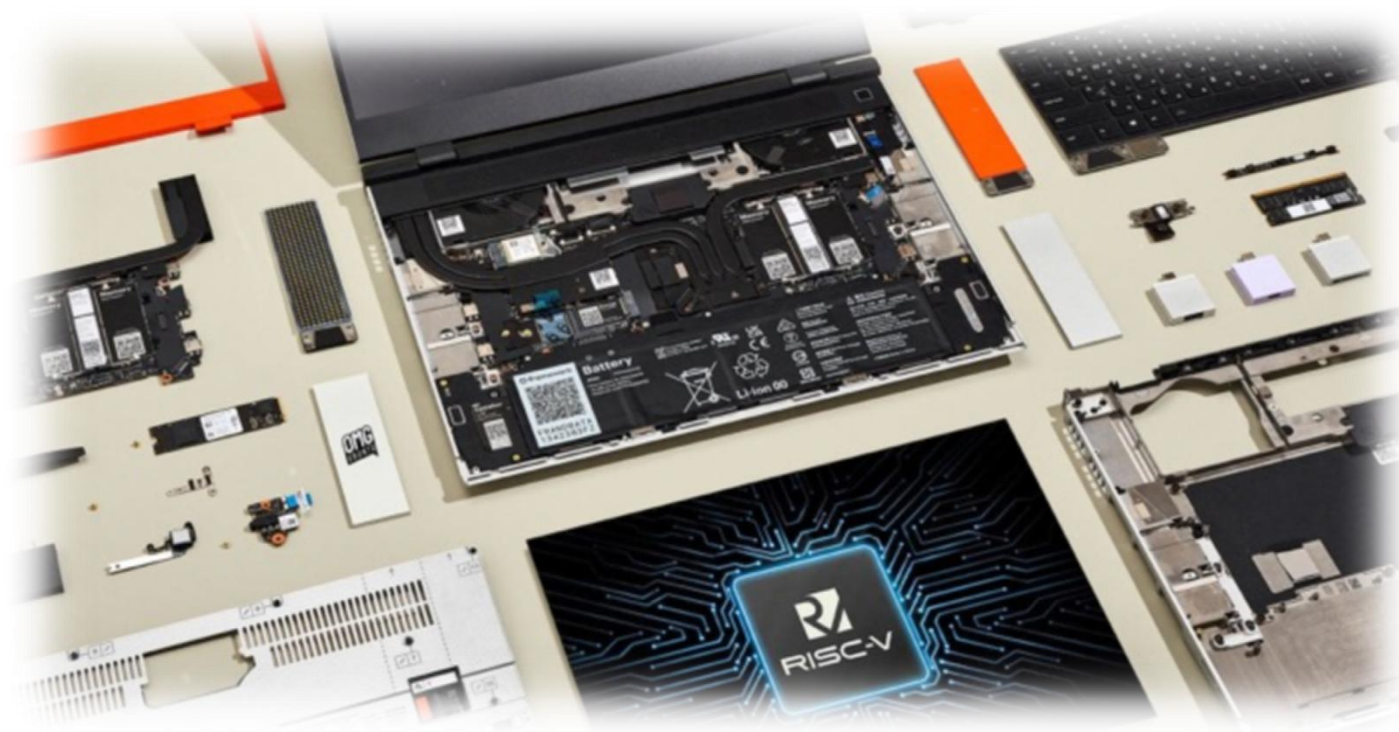
Modular Framework DIY Laptop



DeepComputing x Framework Partnership 2024

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Modular Framework DIY Laptop 2025



**Multiple ISA Arch Supported
Self Installable, Repairable and Replaceable Parts
Upgradable Mainboard & Extendable Innovation**

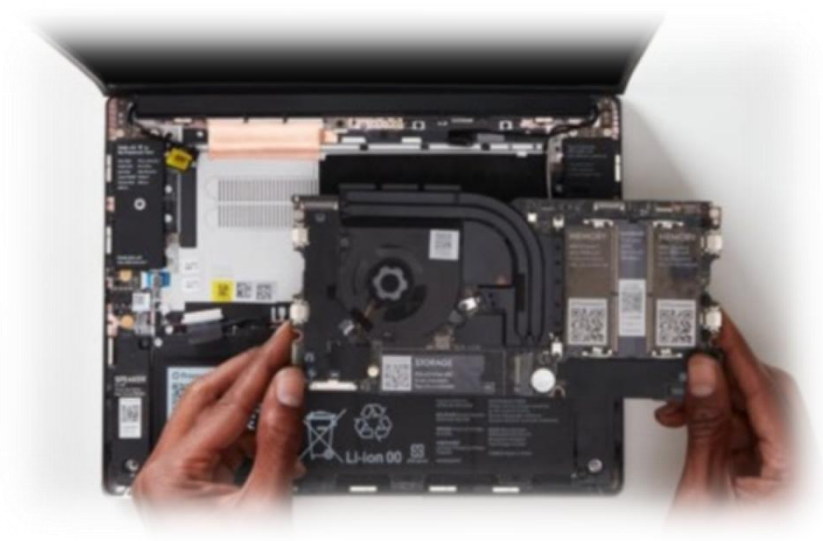
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Framework RISC-V DC-ROMA I Mainboard

2025 Jan

4-core 1.5GHz

8GDDR

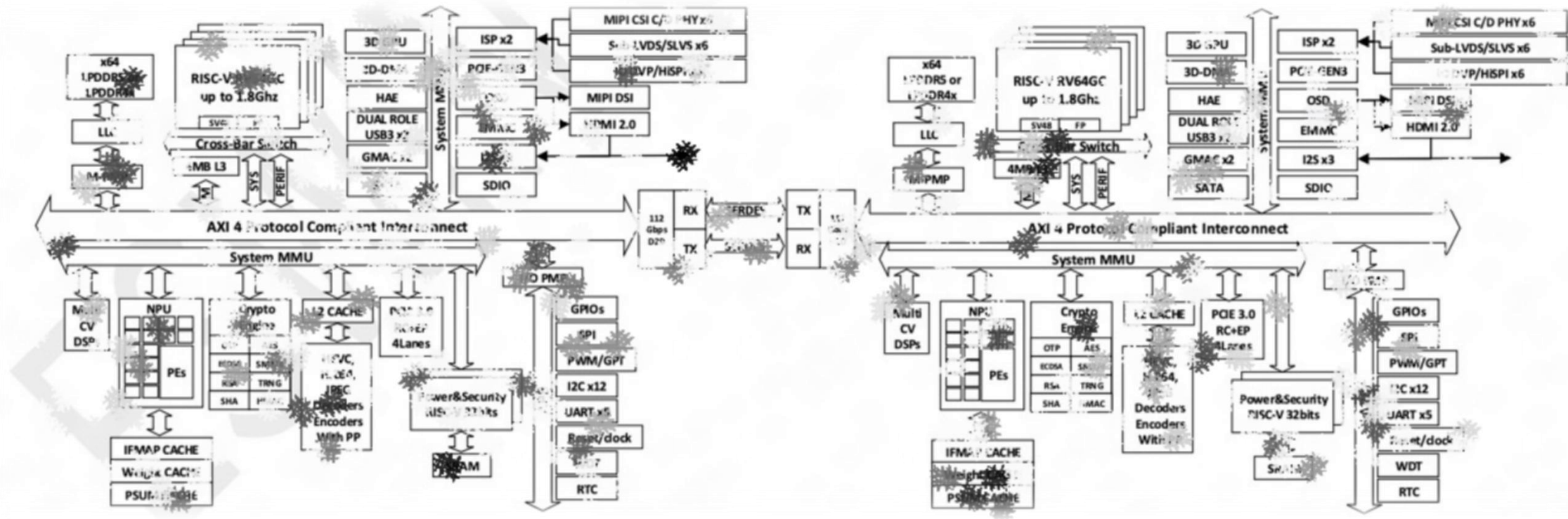


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Challenges Faced for RISC-V SoC

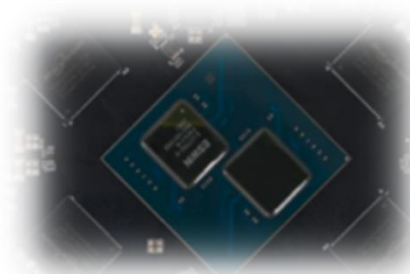
- **Unknown Target Market**
- **Unknown Required Compute Power**
- **Limited Resource Constraint**
- **Limited Time Constraint**
- **Time to All in AI?**

Chiplet Solution: ESWIN 7702x



First RISC-V Chiplet AI SoC in the world.

- Chiplet 2-DIE, 2GHz 8-Core.
- 64G LPDDR5
- 50 TOPS AI (NPU+GPU+CPU)
- 8K@50fps Encoding
- RVV 1.0 on DSP
- PCIe 3.0 (Host/Device)



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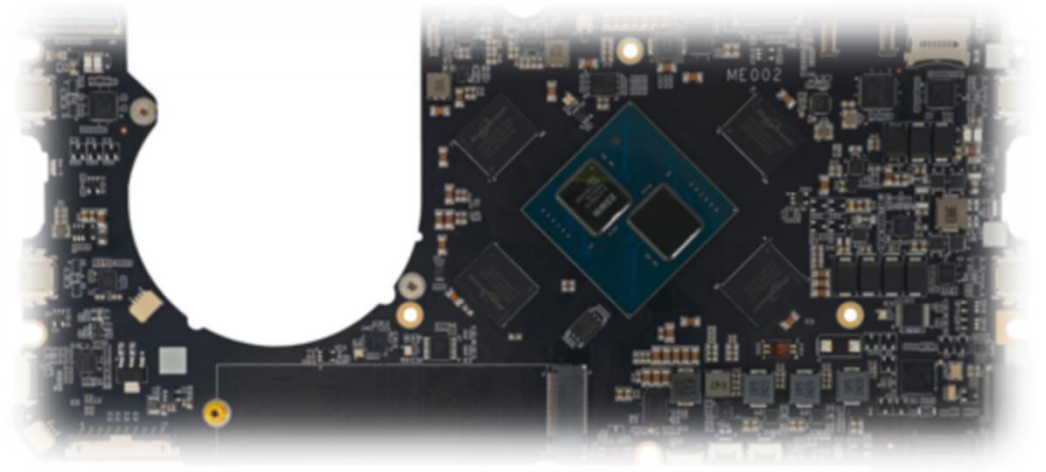
Framework RISC-V DC-ROMA II Mainboard

2025 Oct

8 Core 2GHz, <64G LPDDR5

50 TOPS AI Local Compute

<\$300+



RISC-V AI Journey Even Harder on Software

- **Killer AI Applications:**
 - Video Player/Chrome/Offices/Tools ...
- **Model:**
 - From ResNet, Transformer To Recent DeepSeek ...
- **AI Framework:**
 - From CUDA compatible To PyTorch ...
 - All *.cpp (llama/Ollama/Whisper ...)
 - vLLM ...
- **Porting and Optimising Endless ...**

RISC-V AI Journey on Real “Free” VLC

- **VideoLAN Client**
- **Originated in 1996 at the École Centrale Paris in France,**
- **Since Early 2000’s driven by Jean-Baptiste Kempf**
- **“Free” philosophy,
Ad Free, Subscription Free and Source Code Free**



RISC-V AI Journey on Real “Free” VLC

→ 30 Years
Success

→ And Now AI

2025 TechCrunch CES



Porting Starts....Overall Architecture

- **VLC**
 - **Generate Audio**
- **STT on Whisper**
 - **Audio Speech to Text**
- **Translation on LLM**
 - **Text to Different Languages**

Porting Starts....Native Compiling Environment

- **125+ Dependency Tools and Libraries**
 - OpenJDK, Lua, Rust, Qt, X11...
- **VLC on branch 3.x**
- **Of course**
 - “Most of NOT optimized” by Ludovic Henry, RISE co-chair

Porting Starts....Major Hacks

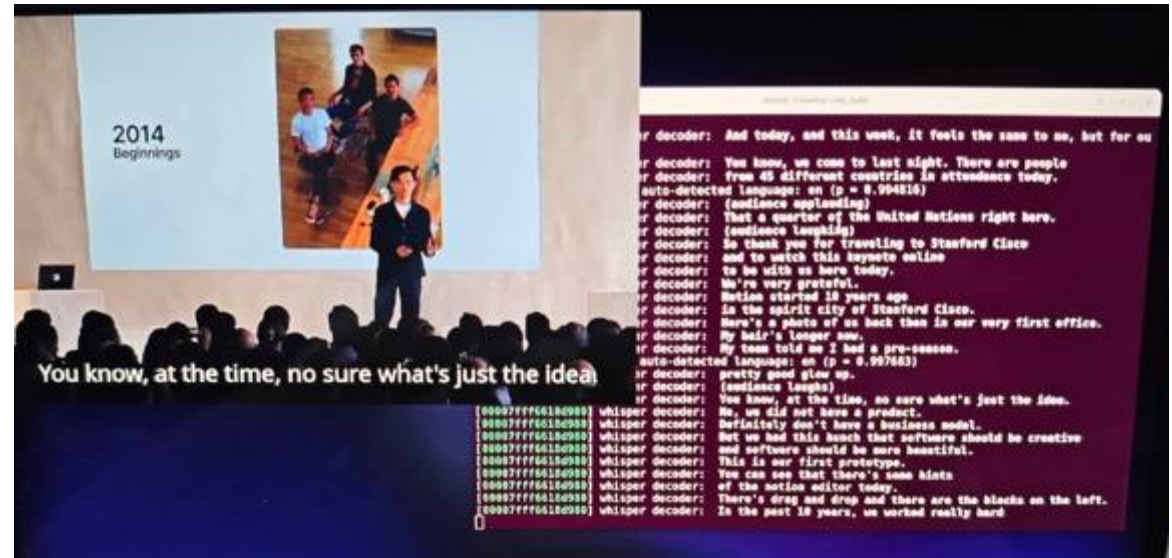
- **VLC**
 - **Getting AI Feature Branches**
- **STT on Whisper**
 - **Adding RISC-V Support**
- **Translation on LLM**
 - **Changing to local run LLM models**

Porting Starts....Hacking Source Code

- **VLC**
 - avcodec random crashing
 - Upgrade ffmpeg rvv support
- **Whisper**
 - Adding Tiny Model Support
 - Local Model Support

Porting Starts....AI Model Support On NPU

- Complicate...
 - Whisper GGML Tiny
 - DeepSeek 7B
- Compile
 - ESWIN ModelZoo SDK
- Test
 - Subtitles
 - 5 Tokens/S on DeepSeek 7B too slow for language translation



100 AI Startups RISC-V Sponsorship

- **1000** New AI Contributors Awareness and RISC-V Membership
- **100** Excellent RISC-V AI Contributors

Sponsorship

RISC-V + Framework + AI Accelerator

- **Free Framework Devices with AI Compute**
- **Award** for Excellent Contribution
- **Speeches Opportunities on Summit and Workshop**



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Thank You



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