ENERZAi

RZ Ecosystem Partner Solution

ENERZAi Optimium

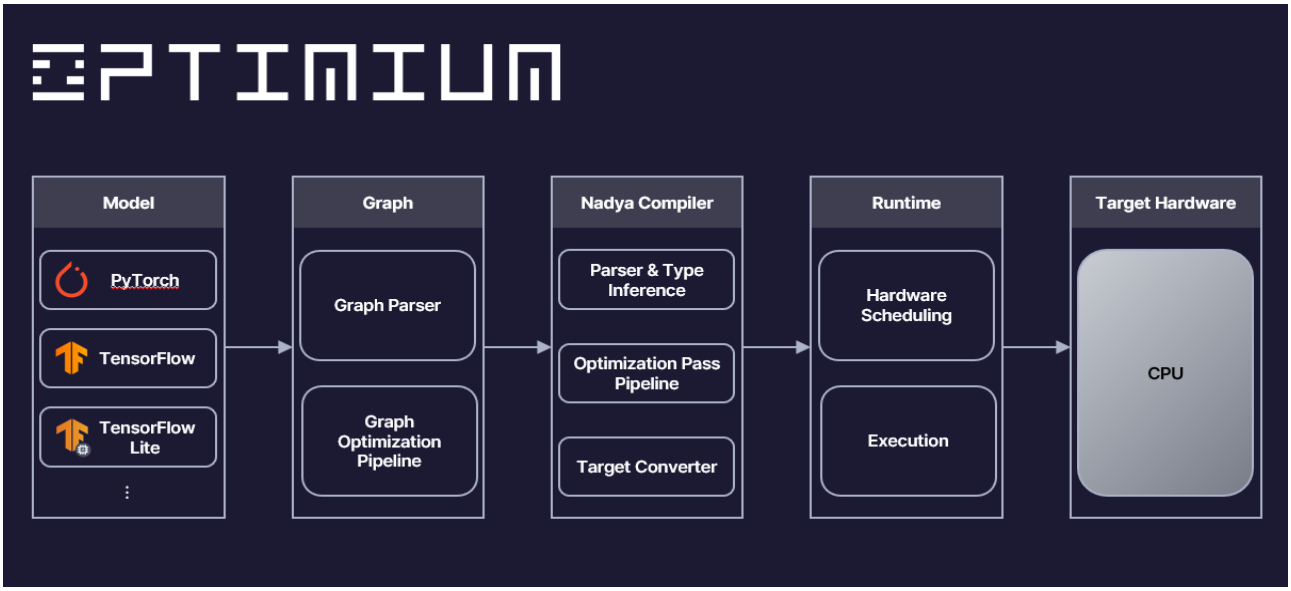
Solution Summary

Optimium is a next-generation AI inference engine designed to maximize AI performance and flexibility. It accelerates AI model inference on CPU while preserving accuracy. With a single, versatile tool, it simplifies AI model deployment across multiple hardware platforms, ensuring seamless integration and efficiency. Optimium can be seamlessly connected to RZ/V2H MPU evaluation kit, and generated the latest benchmark result. Optimium will continue to expand its support to suitable Renesas Linux/Android-based RZ Family of MPUs.

Features/Benefits

- Provided as a Python package for seamless integration into development environment
- Support AI inference optimization for CV(Computer Vision) models on CPUs
- Maximize AI model inference on target hardware with no compromise in accuracy
- Enable convenient deployment, contributing to substantial time & cost reductions

Diagrams/Graphics



Target Markets and Applications

- Wearables
- Appliances
- Industrial
- Robotics
- Surveillance
- Infrastructure monitoring

optimium.enerzai.com

2025.03

ENERZAi

Company Information

Profile

- Year Established: Jan. 2019
- Location: Seoul, Republic of Korea
- Team: 25+ Members from top universities(SNU & KAIST), as well as major companies (Samsung & SK)
- Product: Optimium(AI Inference Engine) & Optimized AI solutions

Technology

- AI model compression that makes AI model smaller while maintaining accuracy
- Low-level optimization that maximizes AI model performance for target H/W

Funding

- Seed funding from NAVER affiliate VC(SpringCamp)
- Raised $5.0M in Series A funding from leading financial institutions including Korea Development Bank and Korea Investment Partners
- Selected as beneficiary of TIPS & Post-TIPS by Korean government

Reference

- Selected as Intel Partner Alliance Gold & Samsung C-Lab Outside
- Ranked 1st and runner-up in 2 tracks at Mobile AI & AIM 2022 Challenge
- Ranked 3rd in 2 tracks at CVPR 2021 - Mobile AI Workshop

Awards

CVPR 2021 – Mobile AI Workshop and Challenges

Real Image Denoising Challenge

Result

Rank	Team	Model Size (KB)	Accuracy (PSNR)	Runtime (ms)
1	Huawei	209	37.52	39
2	Megvii	14,276	37.83	84
3	ENERZAi	81	36.33	11
4	Xiaomi	1,404	37.37	54
5	ENERZAi	118	36.22	23

Note
1) Final Score = $\frac{2^{2\times PSNR}}{C\times Runtime}$. *C is a constant normalization factor*

Learned Smartphone ISP Challenge

Result

Rank	Team	Model Size (KB)	Accuracy (PSNR)	Runtime (ms)
1	Dahua	21	23.2	61
2	ITRI	123	23.73	90.9
3	ENERZAi	9	22.97	65
4	Dahua	175	22.78	77
5	Huawei	244	23.08	94.5

Note
1) Final Score = $PSNR + \alpha \times (0.2 - clip(Runtime))$. *α is set to 20 when Runtime is 0.2 or lower. Otherwise, α is set to 0.5.* $clip = \min(\max(Runtime, 0.03), 5)$

Contact

With the vision to deliver the best AI experience for everything and everyone, our team is ready to help you. Please contact us for more information and we'll get back to you!
Contact: enerzai.com/contact