Jinwoo Park

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Professional Summary

Experienced Machine Learning Engineer with a proven track record in architecting scalable AI systems, leading cross-functional teams, and delivering client-focused solutions across diverse industries. Passionate open-source contributor with expertise in computer vision, reinforcement learning, and distributed systems.

Skills

- **Programming:** Python, Golang, C/C++, Erlang
- **Machine Learning Frameworks:** PyTorch, Diffusers, ComfyUI, Kohya
- **Backend**: Traefik, Authentik, FastAPI, Echo
- **Model Serving Frameworks**: Triton Inference Server, BentoML
- **Testing & Monitoring**: Locust, Prometheus, Grafana, Promtail, Loki
- **Infrastructure & DevOps**: Docker, Kubernetes (k8s), K3S, Helm, ArgoCD, Harbor

ML Engineer Experience

Aug 2023 - present — SNOW Corporation (Seongnam)

- Launched “ID Photo” service with upgraded text-to-image personalization method, achieving a 440% increase in purchases over the previous product (AI Business Profile).
- Built a Kubernetes-based GPU cluster, enabling non-engineers to develop content with minimal engineering effort.
- Researched and developed core technologies for image edits, significantly improving output quality while reducing inference time to one-tenth of the previous solution.

Jan 2022 - Jul 2023 — Annotation-AI (Seoul)

- Optimized Segment Anything inference by 80% (from 1024 to 200 calls), enabling real-time operation on CPUs.
- Designed and deployed model serving and CI/CD systems.

Oct 2020 - Jan 2022 — MakinaRocks (Seoul)

- Led GNN/RL-based FPGA/ASIC placement optimization, achieved performance (WNS +0.7%) on par with ICC2AutoPlacement and HumanPlacement for a single-core CPU design with 18 macros and 120,000 cells and nets. (presented at Deview 2021)

Sep 2019 - Oct 2020 — J.MARPLE (Seoul)

- Researched and developed model compression and model predictive control methods for non-linear dynamical systems.
- Secured 1st place in the model compression track of the AI Grand Challenge 2020, winning a prize of 200 million KRW.

Nov 2018 - Aug 2019 — Medipixel (Seoul)

- Led the guide-wire control automation project for PCI (Percutaneous Coronary Intervention), developing and applying off-policy reinforcement learning and behavior cloning algorithms.
- Self-developed Rainbow IQN RL algorithm, achieving SOTA performance and open-sourced. (GitHub: medipixel/rl_algorithm)

SW Developer Experience

Oct 2014 - Jan 2017 — Ericsson (Anyang)

- Developed and tested LTE RBS L3 features such as Mobility and Load Balancing.
- Improved memory usage by over 20% through enhancements in UE Context reference methods in L3.
- Recognized as a specialist in L3 test automation at the Korea R&D center and gained experience with world-class CI/CD and collaboration systems.

Nov 2013 - May 2014 — Smilegate (Seongnam)

- Developed distributed load testing tool, enabling rapid incident response for global services.

Education

2006 - 2014 — **Bachelor’s Degree, Computer Science**; Dongguk University (Seoul)

- Teaching Assistant, Research Assistant in Visual Simulation Lab, Honors student for years.

OpenSource

Active contributor and creator of widely adopted open-source projects in reinforcement learning, model serving, and computer vision.

- **rainbow-is-all-you-need** ★**1.9k+** Creator; comprehensive RL tutorial, adopted by practitioners and educators globally.
- **pg-is-all-you-need** ★**900+** Co-creator; accessible guide to Policy Gradient methods, referenced in academic courses.
- **rl_algorithms** ★**500+** Lead developer; implemented self-developed Rainbow IQN, achieving SOTA results and community recognition.
- **segment-anything-with-clip** ★**300+** Creator; an advanced resource combining segmentation with CLIP, offering practitioners versatile segmentation tools.
- **model_compression** ★**200+** Contributor; efficient model compression algorithms for embedded systems.

Additional Contributions: PyTorch, Huggingface, BentoML, KServe, GoCV, PyG, and more.

Publications

Dec. 2021 — “**Deep Reinforcement Learning for Guidewire Navigation in Coronary Artery Phantom**” published in IEEE Access

Jihoon Kweon; Kyunghwan Kim; Chaehyuk Lee; Hwi Kwon; Jinwoo Park; Kyoseok Song

- Proposed and validated a deep reinforcement learning approach for autonomous guidewire navigation in coronary artery models, demonstrating improved precision and safety for medical robotics applications.

Patents

Dec. 2022 — **[1] METHOD FOR AUTOMATING SEMICONDUCTOR DESIGN BASED ON ARTIFITIAL INTELLIGENCE**; 1024748560000

Jinwoo Park; Tod Myung; Jiyoon Lim; Kyeongmin Woo

- Invented an AI-driven method to automate and optimize semiconductor design processes, enhancing design efficiency and reducing manual intervention.

Jul. 2022 — **[2] METHOD FOR AUTOMATING SEMICONDUCTOR DESIGN BASED ON ARTIFITIAL INTELLIGENCE**; 1024200710000

Jinwoo Park; Tod Myung; Jiyoon Lim; Kyeongmin Woo

- Developed a novel artificial intelligence solution for automating key stages in semiconductor design, enabling faster and more reliable chip development.