

Résumé: Jeayoung Jeon

MLOps and Cloud-Native Engineer (Last modified at 2024-11-21)

SUMMARY

My name is Jeayoung Jeon [전재영], and I'm a software engineer in South Korea. I'm developing my career with the synergy of **Computer Vision Research Experience** and **Cloud-Native Engineering Experience**. Here is my career history:

Duration	Company	Position	Role
2021.01-2024.10 [3Y, 10M]	MAXST, Technology Division	Senior	MLOps/DevOps & Computer Vision Engineer
2012.03-2020.08 [8Y, 6M]	POSTECH, Department of Electrical Engineering	Integrated	Automotive & Computer Vision Researcher
2008.03-2012.02 [4Y]	kit, School of Electronic Engineering	Bachelor	Information Communication & Digital Signal Processing

I'm passionate about **collaboration culture** and **automation** that can achieve the **best results** with **fewer people**. I'm always looking for the **optimal way** to achieve both **performance improvement** and **cost reduction**. Based on my experience and achievements, I hope to have a career that grows with the company. For more details, please visit my [portfolio](https://jyje.live) and [blog \(Korean\)](https://blog.jyje.live).

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in: [LinkedIn: jyje](https://www.linkedin.com/in/jyje)

🎓: [Google Scholar: Jeayoung Jeon](https://scholar.google.com/citations?user=gwCPQM8AAAAJ)

🐙: [Github](http://github.com/jyje)

📦: [StackShare](https://stackshare.io/jyje/jyje-pro-stack)

Projects

Jan 2024 - Oct 2024 (10 Months)

🏠 **Widearth: Digital Twin Platform with Spatial Map & AR Contents at MAXST**

Roles: Development of ML pipelines, APIs and Infrastructure

- DevOps** Designed CI/CD pipelines for web servers and ML workloads. Set git-flow environments with GitOps and led decision-making for deployments.
- Hybrid Cluster** Built hybrid clusters with AWS EKS and bare-metal Kubernetes. The ML pipelines are executed on on-premise clusters to optimize GPU costs. Backup pipelines are configured on EKS to increase availability.
- ML Pipeline & API** Designed Argo Workflows based ML data pipelines to generate spatial maps. Developed cloud-native API endpoints managing lifecycle of pipelines.

Results: 'Contribute Dev & Ops' ← Built Hybrid Clusters, ML Pipelines, and CI/CD Pipeline [contrib 75%+]

- Main DevOps** Manage CI/CD for **Widearth** project. Leading **40+ deployments** for **3 months**.
- Robust Hybrid Infra** Achieved '**96% availability/year and 14d downtime**' using hybrid clusters and DevOps support.
- ML Pipeline** Designed **ML APIs and data pipelines** in multi-clusters. Reduces costs of public cloud by **50%**.

Skills: Core Skills for Project Widearth

AWS EKS Karpenter Python FastAPI Argo Workflows Argo CD

Jan 2024 - Apr 2024 (6 Months)

🏠 **MLOps: On-premise MLOps with the Latest Open Source Projects at MAXST**

Roles: Built Core MLOps Platform using CNCF Open Source Projects

- AutoML** Making AutoML tuning hyperparameters with Katib and Argo Workflows without pre-build.
- Distributed Training** Developing distributed learning environments using Kubeflow Training Operator.
- JupyterHub** Developed a platform for managing on-demand Jupyter Notebooks, allowing researchers to instantly configure their required research environment.

Results: 'Initiate MLOps' ← Improve GPU utilization for AI research using Kubeflow, JubeterHub [contrib 90%+]

- MLOps** Applied latest open sources to improve the on-premises research environment.
- GPU Utilization** Increased GPU utilization by **3 times** and conducted more than **800 AutoML experiments**.

Skills: Core Skills for On-Premise MLOps

Kubeflow/Katib Kubeflow/Training Operator Argo Workflows Grafana TensorBoard

Skills

SUMMARY

Here are my skills and highlighted items are industry-ready.

MLOps & LLMOps :

Kubeflow Data Pipeline AutoML Katib
Training Operator JupyterHub PyTorch OpenCV
Ollama RAG OpenAI

DevOps :

Kubernetes Argo Workflows AWS EKS
Kubespray IaC Terraform Ansible Grafana
Karpenter

GitOps :

CI/CD Argo CD Bitbucket Pipelines
GitHub Actions Kaniko Docker/Multi-stage
Slackbot

Application Development :

Python/FastAPI Unit Testing .NET/WPF
.NET/MAUI Unity

Programming languages :

Python C# C/C++ Go MATLAB

Tool, OS and Hardware :

Visual Studio Code Visual Studio
Jupyter Notebook MATLAB/Simulink Windows
WSL2 Ubuntu Alpine MacOS
ARM64/Raspberry Pi AMD64/Bare Metal FPGA

Jan 2023 – Dec 2023 (12 Months)

DevOps: Development of Hybrid Clusters Providing CI/CD and Chatbot at MAXST

(<https://maxst.com/ENG/main>)

Roles: Development of Hybrid Clusters, CI/CD Pipelines, and Chatbot

- Hybrid Cluster** Built a hybrid cluster with AWS EKS and on-premise Kubernetes. GPU workloads are executed on on-premise clusters to optimize costs. Web and backup workloads are configured on EKS to increase availability.
- IaC** IaC with Terraform and Ansible to manage the cluster infrastructure: Terraform to set up AWS EKS cluster. Ansible-based Kubespray to set up on-premises cluster.
- CI/CD** Configured fast CI for collaboration using Bitbucket Pipeline. Configured high-performance custom CI using on-premises Argo Workflows. Implemented CD using GitOps with Argo CD and Slackbot. IaC was also configured as CI/CD and pipeline to set up declarative infrastructure.

Results: 'Initiate DevOps' ← Developed Hybrid Clusters using AWS EKS and On-Premise [contrib 75%+]

- Robust Hybrid Cluster** Achieved **50%+ cost reduction** compared to pure cloud infrastructure using on-premises cost-effectiveness.
- DevOps Culture** Propagation of DevOps culture including app modernization and CI/CD. Decision support through monitoring.

Skills: Core Skills for Hybrid DevOps

Kubernetes Argo Workflows AWS EKS IaC Terraform Python/FastAPI Python/Bolt (Slack)

Jan 2021 – Dec 2022 (2 years)

Digital Twin Research Engineer at MAXST (<https://maxst.com>)

Roles: Development of computer vision algorithms and construction of digital twin systems

- Visual-SLAM & SfM** Developed digital image processing algorithms for Visual-SLAM and SfM. Constructed a digital twin system using image processing algorithms.
- Technical Research Personnel** Engaged in computer vision positions related to graduate school majors and performed military alternative service.

Results: 'Proof of Concepts' ← Algorithm research for digital twin systems [contrib 50%]

- Digital Twins** Research and development of Visual-SLAM and ICP algorithms for digital twin systems
- Automation** Development of automated pipelines for data acquisition and analysis

Skills: Core skills for digital twin research

Computer Vision SfM Visual-SLAM Python OpenCV .NET/C# Unity

Jan 2012 – Aug 2020 (8 Years)

Digital Signal Processing and ADAS Researcher (Integrated Program) at POSTECH

(<https://eee.postech.ac.kr/>)

Roles: Studying and researching in the field of digital signal processing and computer vision

- 2018 - 2020** **Computing and Control Engineering Lab. (Prof. SH, Han)**
 - Thesis: [Virtual Visual-SLAM for Real-World Environments](https://postech-primo.hosted.exlibrisgroup.com/permalink/f/1031d/vf/82POSTECH_INST21232402040003286) (https://postech-primo.hosted.exlibrisgroup.com/permalink/f/1031d/vf/82POSTECH_INST21232402040003286)
- 2012 - 2018** **Advanced Signal Processing Lab. (Prod. H, Jeong)**
 - Real-Time Advanced Driver Assistance Systems using FPGA
 - Research on Traffic Sign & Lane Terrain Detection
 - 1st Author: [Polygonal symmetry transform for detecting rectangular traffic signs \(IEEE ICASS 2014\)](https://ieeexplore.ieee.org/abstract/document/6987934) (<https://ieeexplore.ieee.org/abstract/document/6987934>)
 - Research on Stereo Vision & Markov Random Fields
 - 3rd Author: [Cost aggregation table: A theoretic derivation on the Markov random field and its relation to message passing \(IEEE ICIP 2015\)](https://ieeexplore.ieee.org/abstract/document/7351196) (<https://ieeexplore.ieee.org/abstract/document/7351196>)

Results: 'R&D' ← Studying on Automotive Simulations in Virtual Environments and ADAS On-Edge.

- Digital Twins** Virtual Visual-SLAM for Real-World Environments
- Edge ADAS** Research of ADAS including Traffic Sign Detection & Lane Terrain Detection with FPGA

Skills: Core Skills for ADAS Research

Computer Vision Digital Signal Processing Markov Random Fields ADAS Traffic Sign Detection
Lane Terrain Detection MATLAB/Simulink C/C++

Interests



Edge :

Raspberry Pi Cluster

Cluster Optimization :

Karpenter BI using Grafana (PLG)

CNCF Projects :

Kubeflow Argo Projects

Languages



Korean :

Native

English :

Working Proficiency

Work



Mar 2024 – present

Senior Software Engineer [책임연구원] at **MAXST** (<https://maxst.com/ENG/main>)

Roles: Developed On-Premise Clusters Providing MLOps for Technology Division in MAXST

- **MLOps** Architecting and optimizing on-premise Kubernetes clusters to deliver comprehensive MLOps solutions
- **DevOps** Building hybrid clusters with AWS EKS and bare-metal Kubernetes. Participated in projects as a DevOps role, contributing to service launches. Propagated DevOps culture, including CI/CD configuration and app modernization.
- **Hybrid** Implemented and operated hybrid clusters combining AWS EKS and on-premises Kubernetes. Built on-premises clusters using Ansible and Kubespray, and configured AWS EKS clusters using Terraform.

Skills

Kubernetes On-Premise AWS Argo Workflows Data Pipeline CI/CD Computer Vision OpenCV

Jan 2021 – Feb 2024 (3 Years)

Software Engineer [선임연구원] at **MAXST** (<https://maxst.com/ENG/main>)

Roles: Associate R&D Engineer for Technology Division in MAXST

- **Algorithm Research** Reviewing computer vision algorithms in state-of-art papers and implementing prototypes.
- **DevOps** Building hybrid clusters and providing data pipelines for digital twins.
- **Technical Research Personnel** Serving as a substitute for military service for 3 years, engaging in the industry in the related field of computer vision major.

Skills

Kubernetes On-Premise AWS Argo Workflows Data Pipeline CI/CD Computer Vision OpenCV

Education



Mar 2012 – Aug 2020

Master's Degree (Integrated Program) in Department of Electrical Engineering, Signal Processing & Computer Vision from Pohang University of Science and Technology (POSTECH) with GPA of 3.2/4.3

Mar 2008 – Feb 2012

Bachelor's Degree in School of Electronic Engineering, Electronic Communication from Kumoh National Institute of Technology (KIT) with GPA of 4.3/4.5

Certifications



Nov 2024 (Expired in Nov 2027)

GitHub Foundations (<https://www.credly.com/badges/876fa6b3-0b27-4ddf-bbb3-a9d853918566>) from **GitHub**

A credential that verifies expertise in version control and collaboration tools using GitHub.

Sep 2024 (Expired in Sep 2026)

CAPA: Certified Argo Project Associate (<https://www.credly.com/badges/ee42c2c7-2ac3-411f-8713-cc26cbec8022>) from **The Linux Foundation**

A credential that verifies expertise in the Kubernetes native DevOps tool, Argo Projects

Jun 2024 (Expired in Jun 2026)

CKAD: Certified Kubernetes Application Developer (<https://www.credly.com/badges/9e072a3a-57d0-403e-8bef-5831d618675c>) from **The Linux Foundation**

A credential that verifies expertise in developing cloud-native applications using Kubernetes.

Mar 2024 (Expired in Mar 2027)

CKA: Certified Kubernetes Administrator (<https://www.credly.com/badges/d944bde7-222a-4ce5-b4e6-4e6c84df0ef8>) from **The Linux Foundation**

A credential that verifies expertise in managing Kubernetes clusters.