Résumé: Jeayoung Jeon

MLOps and Cloud-Native Engineer (Last modified at 2024-11-08)

SUMMARY

My name is Jeayoung Jeon [의 전제영], 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://piog.live) and **blog (Korean)** (https://piog.live).

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

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 onpremise 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 (https://widearth.world) 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 (https://widearth.world)

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

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

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

SUMMARY

Skills

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

MLOps & LLMOps :

Kubeflow Data Pipeline AutoML Katib

Training Operator JupyterHub PyTorch

OpenCV Ollama RAG

DevOps :

 (Kubernetes)
 (Argo Workflows)
 (AWS EKS)

 (Kubespray)
 (IaC)
 (Terraform)
 (Ansible)
 (Grafana)

 (Karpenter)
 (Argo Workflows)
 (AWS EKS)

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

Tools:

Visual Studio Code Visual Studio

Jupyter Notebook MATLAB/Simulink

OS and Hardware:

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 onpremise clusters to optimize costs. Web and backup workloads are configured on EKS to increase availability.
- IaC laC 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 onpremises 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' \leftarrow 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://postechprimo.hosted.exilibrisgroup.com/permailnk/fr/031dv//82P0STECH_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)
- 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)

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

- 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

Korean :

Languages

Korean : Native
English : Working Proficiency

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 [194 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

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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

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

Mar 2024 (Expired in Mar 2027)

챁 CKA: Certified Kubernetes Administrator (https://www.credly.com/badges/d944bde7-222a-4ce5-b4e6-4e6c84df0ef8) from

The Linux Foundation