
Summary

I am a machine learning engineer with years of experience in machine learning/software development. I love coding and I am happy to explore new technologies and new challenges in the field of machine learning.

Machine Learning/Software Engineer Work Experience**U-Next Inc., Meguro, Tokyo, Japan****Jun 2023 – Now****Machine Learning Engineer, Full-Time (Python)**❖ ***Generative AI for a stealth project***

- Tune Stable diffusion model to generate synthetic images.
- Train and tune LoRa model with self-tagged data.
- Research the most cutting-edge technology and try to make it applicable for business use.
- Internal technological meeting

❖ ***MLOps Development for Recommendation services***

- Deploy a machine learning pipeline to make recommendations with Airflow.
- Deploy the recommendation API service with K8s.
- CI/CD development with ArgoCD.

CADDi Inc., Taito-Ku, Tokyo, Japan**Jul 2022 – Feb 2023****Machine Learning Engineer, Full-Time (Python and Go)**❖ ***Model Building Image search for CAD image data***

- Designed deep learning models to implement an image retrieval search function.
- Built and tuned object detection models or image matching models to achieve image search functions.
- Apply data augmentation to deal with insufficient data problem.

❖ ***API development for Image classification***

- Built different deep learning models to make image classifications for CAD images
- Tuned models with Optuna.
- Designed the ML pipeline on GCP environment with Kubeflow.
- Store and reload the model for API development.
- Monitored the model serving performance with logging functions.
- Work with backend team to make CI/CD development with Go.

ExaWizards Inc., Minato-Ku, Tokyo, Japan**Aug 2020 – May 2022****Machine Learning Engineer, Full-Time (Python)**❖ ***Object Detection (Count number of cars from video)***

- Clean and tag the video data that came from customer.
- Apply object detecting model to count number of cars from the video to estimate the traffic on highway.
- Tune the model to achieve better accuracy.

❖ ***Machine Learning Software: 3D Image Analysis with PointCloud (Customer Facing, end-to-end)***

- Maintain an end-to-end software for making analysis on 3D image (Git, CI).
- Transform CAD data into PointCloud data.
- Applied PointNet neural network to predict volume of a point-cloud data.
- Make PCA analysis to measure the rotation of the image.

❖ ***Machine Learning Ops Project (Internal development)***

- Developed a data pipeline for machine learning product on a cloud environment (AWS).
- Made a template machine learning pipeline on Kubeflow.
- Apply PyTorch lightening as code base to carry out tasks such as object detection or classification.
- Internally used pipeline can be used for future platform development.

Cisco Systems Inc., San Jose, CA, USA**Software Engineer, Full-Time****Jan 2015 – Jul 2016**❖ **Data Center Development: (C++)**

- Designed and developed Application Framework for Cisco Data Center Network Manager (DCNM) Product.
- Built new features and fix bugs for operation system of Cisco Data Center switches.
- Maintain the codebase of data center switch within different lifecycles.
- Applied CI development mode for feature building.

Machine Learning Research Internship Experience**Amazon Inc., Seattle, WA, USA****May 2020 – Aug 2020****Applied Scientist Internship**❖ **Project: Generate Scene Text Images for training Optical Character Recognition (OCR)**

- Conducted a research project on data augmentation.
- Built deep neural networks to generate synthetic text images to boost training of the OCR system.
- Experimented with different GAN algorithms and improved algorithms by implementing an optimization function.

Hewlett Packard Enterprise Inc., San Jose, CA, USA**May 2019 – Aug 2019****Machine Learning Software Development PhD Internship in AI Lab**❖ **Project: Deep Learning development for object detection**

- Applied CUDA and tensorflow library to train models and make data augmentation.
- Developed and tested a GAN model to make data augmentation.

Rakuten Inc., Setagaya-Ku, Tokyo, Japan**May 2018 – Aug 2018****Computer Vision Researcher Internship in Rakuten Institute of Technology**❖ **Project: Image Inpainting with Deep Learning**

- Reproduced a deep learning model (GAN model) to inpaint images.
- Developed the improved model and tested models on company's internal data.

Software Engineer Internship Experience**Cisco Inc., San Jose, California, USA****June 2014 – Sept 2014****Software Engineer Internship**❖ **Project: Web application for Bug Report.**

- Applied web technologies such as PHP and HTML5 to build a web application.
- The application was used for sending bug report and sending automatic email alerts.

ServiceNow Inc., San Jose, California, USA**June 2012 – Aug 2012****Software Engineer Internship**❖ **Project: Web application for API Document.**

- Applied web technologies such as PHP and HTML5 to build a web application.
- The application was used for creating API documents for Java developers.

Technical Skills**Programming Skills:** Python, Java, C++, SQL, GO**Machine Learning:** Deep Learning, Computer Vision, general machine learning algorithms, Big Data**Software Development:** Gitlab CI, Agile, Jira, ArgoCD**Cloud Environment:** AWS, GCP**AI framework:** Tensorflow, PyTorch, Scikit Learn, XGBoost, Pandas**ML Tools:** TXExtended, TorchServe, Kubeflow**Other:** Kubernetes, Airflow

Education**Indiana University, Bloomington**

Aug 2016 – May 2020

- ❑ PhD in Intelligent System and Engineering (dropout)
- ❑ Research focusing on Machine Learning and Computer Vision.

Santa Clara University

Sep 2012 – Dec 2014

- ❑ Master's Degree in Computer Science and Engineering
- ❑ Research focusing on Recommendation Systems and Information Retrieval

University of Minnesota, Twin Cities

Jan 2008 – May 2012

- ❑ Bachelor's Degree in Computer Engineering

Selected Publications and papers**Achieving Outcome Fairness in Machine Learning Models for Social Decision Problems**

Jul 2020

*International Joint Conference on Artificial Intelligence (IJCAI)***Learning Adversarial Interactions in Stackelberg Security Games with Limited Data**

Dec 2019

*Bridge Game Theory and Deep Learning Workshop in NeurIPS Conference***Deep Generative Inpainting with Comparative Sample Augmentation**

Aug 2019

*AdvML Workshop in ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)***PAGANDA: An Adaptive Task-Independent Automatic Data Augmentation**

Jun 2019

*AMTL Workshop in International Conference on Machine Learning (ICML)***User Click Prediction in Personalized Job Recommendation**

Jun 2018

*World Wide Web Journal***What to play next? A RNN-based music recommendation system**

Nov 2017

*Asilomar Conference on Signals, Systems, and Computers***Where Not to Go? Detecting Road Hazards Using Twitter**

Jul 2014

*International ACM SIGIR Conference on Research and Development in Information Retrieval***A pattern matching approach to streaming slot filling**

Sep 2013

Text REtrieval Conference (TREC)