Tony Ho - Computer Vision and Machine Learning Engineer

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Portfolio

EXPERIENCE

Machine Learning Engineer

Hypothetic (Co-op) - Vancouver, Canada   May 2023 - Current

- Developing and iterating on point cloud models for 3D segmentation
- Training deep learning models using PyTorch and PointNet++, in Python
- Prototyped a web tool for zero-shot segmentation using SAM in ReactJS
- Created an auto-labeling method for 3D models using UV texture data
- Researching applications in the generative 3D field based on recent papers

Computer Vision and Machine Learning Engineer

DaoAI Robotics (Co-op) - Vancouver, Canada   Jan 2022 - Aug 2022

- Developed a computer vision training, testing, and deployment pipeline
- Trained deep learning models using PyTorch, Torchvision, Detectron2, in Python
- Applied image processing and model inference, in C++ with LibTorch
- Implemented segmentation models such as Faster-RCNN, Mask-RCNN, UNet
- Improved accuracy to over 95% for bin picking tasks in a factory environment
- Researched, developed, and deployed a Rotated Mask-RCNN model, improving mask IOU from less than 0.5 to over 0.8 for client specific dataset

Game Developer Software Engineer

Critical Force - Kajaani, Finland & Seoul, South Korea   Jul 2017 - Apr 2019
Artcode Interactive - Vancouver, Canada   Nov 2014 - Jan 2017

- Created various gameplay systems using 3D vector physics, in C# with Unity3D
- Optimized code performance for real-time 3D simulations in mobile devices
- Developed core features and respective developer tools for live services, used by 1 million daily users, including gameplay, asset pipeline, UI, social, localization
- Worked in agile environments with daily stand-ups with technical and non-technical stakeholders

PROJECTS - Portfolio Website

AWS Warehouse Image Classifier
Trained ResNet34 and ViT image classification models using AWS Sagemaker and other cloud resources, leveraging distributed training and spot instances

Connect4 Action AI
Trained Faster-RCNN instance segmentation model and exported to PyTorch Mobile, deployed on Android and displays results on device in realtime, in Python and Java

Emoji Prediction
Built a dataset using Twitter API and fine-tuned the DistilBERT model for text classification with emojis as labels, in Python

EDUCATION

Simon Fraser University
Vancouver, Canada

Master of Science in Professional Computer Science

Visual Computing specialization

Sep 2022 - Apr 2024 (expected graduation date)

Bachelor of Science in Computer Science

Sep 2020 - Aug 2022

TECHNICAL SKILLS

- Python
- C/C++
- C#
- Java
- Git
- PyTorch
- Torchvision
- OpenCV
- Weights&Biases
- Tensorflow
- AWS Sagemaker
- Unity3D
- Jupyter Notebook
- Visual Code
- Android Studio
- Pandas
- Matlab
- Linux
- SQL
- Docker

CERTIFICATES

Udacity Nanodegree for **AWS Machine Learning Engineer**

Udacity Nanodegree for **Deep Reinforcement Learning**

Udacity Nanodegree for **C++**