

# Philip Cho

ComputerVision / Machine Learning Engineer

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## PROFILE

Machine Learning / Computer Vision (CV) Engineer working at OneCup AI, implementing and integrating various CV algorithms to the cloud based AI pipeline. Completed Visual Computing Master's Degree at SFU, as well as Bachelor of Commerce degree at Sauder School of Business. Combines a businessman acumen and the skills of a developer, possessing years of work experience in both fields.

## WORK EXPERIENCE

### MACHINE LEARNING ENGINEER - (SEP/2022 - PRESENT)

SKYLAB TECHNOLOGIES - VANCOUVER, BC

- Worked on the research and implementation of Image Quality Assessment (IQA) algorithm with continual learning logic to help photographers choose best photos that fits their interest
- Defined more efficient ML training database design using Object Relational Mapping (ORM). Extracted and cleaned scattered training data in NAS and uploaded data to cloud storage to ensure reliability. Created export scripts connecting cloud storage and database to increase accessibility of millions of images and annotation files
- Contributed to develop central code infrastructure to link company's products in the cloud together for DevOps improvement
- Developed a live demo service at CVPR conference to showcase the company's AI based retouching service

### COMPUTER VISION ENGINEER - (APR/2021 - AUG/2022)

ONECUP AI - VANCOUVER, BC

- Constructed inference pipeline with NVIDIA DeepStream 6 SDK and Triton Inference Server. Trained, tested and integrated:
  - Convolutional Neural Network (CNN) object detectors that detect animals and their body parts/tags
  - Recurrent Neural Network (RNN) and CNN based Optical Character Recognition (OCR) model that reads animal's ID tag attached in its ears, improving the effectiveness of the tracker built into DeepStream pipeline
  - HRNet and Transformer based pose estimation models that detect animal keypoints and classify their behaviors
- Alleviated annotated data shortage by creating synthetic data using Unreal Engine. Made data photorealistic by applying semantic segmentation based image to image translation

## EDUCATION

### MASTER OF COMPUTER SCIENCE - (SEP/2019 – OCT/2021)

SIMON FRASER UNIVERSITY (SFU) - VANCOUVER, BC

Specialized in Visual Computing within the Computer Science department, studying Computer Vision, Machine Learning, 3D modeling, AR/VR, and etc. Worked on various projects such as the following:

- Using GPT-2 Algorithm and thousands of previous conversations between doctors and patients, created a chatbot that automatically responds to patient's COVID-19 related inquiries. Deployed the model on a webapp using JS and Flask backend. Code link: [https://github.com/chophilip21/doctor\\_chatbot](https://github.com/chophilip21/doctor_chatbot)
- Utilizing Health Canada's COVID-19 real time data API, created a full-stack forecast web app that processes the data with Apache Spark and visualizes the data with Chart.js. Also implemented univariate time series forecast feature based on the previous trend. Code link: [https://github.com/chophilip21/covid\\_pyspark](https://github.com/chophilip21/covid_pyspark)
- Constructed state-of-the-art fine-grained classification DL model that recognizes and precisely distinguishes 300+ classes or similar looking cars (and birds). The model dissects images into multiple scales of jigsaw patches, progressively learning various details hidden in the images, and further uses innovate loss function to reduce overconfidence of classifiers. Code link: [https://github.com/chophilip21/jigsaw\\_image\\_classification](https://github.com/chophilip21/jigsaw_image_classification)

### BACHELOR OF COMMERCE - (2011 - 2016)

UNIVERSITY OF BRITISH COLUMBIA (UBC) - VANCOUVER, BC

Graduated from UBC'S Sauder School of Business with a double major in Marketing and International Business (IB).

## SKILLS

Python

DeepStream

Pytorch

Kubernetes

Terraform

C++

ORM

Flask/Django