

Ayrton San Joaquin

✉ ayrton.sanjoaquin@yale.edu | ☎ +65 88147588 | 📍 Singapore | [in ajsanjoaquin](https://www.linkedin.com/in/ajsanjoaquin) | ajsanjoaquin.github.io

Education

Yale-NUS College

BACHELOR OF SCIENCE (HONORS) IN DATA SCIENCE, MINOR IN PHILOSOPHY

Awarded Scholarship to attend Full-time

Singapore

August 2018 - May 2022

Experience

Data Protection and Trustworthy Machine Learning Lab, NUS

Singapore

UNDERGRADUATE RESEARCHER

May 2021 - Present

- Pitched and led a project to analyze [Unlearnable Data](#) as a data protection method. Paper to be refined in a workshop.
- Collaborating with Google Brain on privacy attack research for my bachelor's thesis and advised by Prof. Reza Shokri

NUS-Tsinghua Center For Extreme Search (NeXT++)

Singapore

DEEPPAKE DETECTION RESEARCH INTERN

May 2020 - August 2020

- Processed ~200,000 images from FaceForensics++ Dataset and trained various detector models (Based on EfficientNet and Xception Net) using a High Performance Computing Cluster
- Read and adapted various robustness strategies against adversarial noises (e.g. Adversarial Training, Randomized Smoothing)

Arterys (Freelance)

San Francisco, United States

DEEP LEARNING ENGINEER (VOLUNTEER)

March 2020 - June 2020

- Created a COVID-19 Pneumonia classifier four days after pandemic declaration, and developed it on an IBM Power9 System provided by A.I. Singapore.
- Contacted by Arterys, and [Deployed model in the Arterys platform](#), alongside models from NVIDIA and Ping An Technology, for use by American hospitals and researchers.

Skills

Programming Languages:

Python, Java, R

Machine Learning in Python:

Pytorch, Pytorch Lightning, NumPy, Sickit-Learn, Tensorflow, Keras, Jax

Data Management:

Pandas, SQL, MS Excel

Application Deployment & Version Control:

Docker, Google Cloud, Git, Singularity

Open-Source Projects & Contributions

Twitter Algorithmic Bias Challenge 2021

- Identified unintended sexualization of non-sexual images involving nudity by the [Twitter Image Cropper Algorithm](#). Finished 9th out of 40 teams worldwide.

Explaining Neural Networks with Meaningful Perturbations

Pytorch, NumPy

- For explaining an image classifier's prediction, I implemented the algorithm described in *Explanations of Black Boxes by Meaningful Perturbation* (Fong, et. al., 2018).

COVID-19 Pneumonia Classifier for Diagnosis Triage

Fastai, Pytorch, Pandas, Docker

- Trained a Resnet-34 Convolutional Neural Network (CNN) on ~26,000 images with Resampling to detect Pneumonia caused by COVID-19 on xray scans ultimately to triage patients for urgent diagnosis. AUROC for labels "covid", "opacity", "nofinding" were at 99.97%, 92.64%, and 92.73%, respectively.

Publications

February
2021

[Let's Keep Explainable Methods Practical and Relevant](#), *Towards Data Science*

March 2020

[Using Deep Learning to Detect Pneumonia caused by COVID-19](#), *Towards Data Science*

January
2020

[Three Things I learned from Creating Fake Faces Using A.I.](#), *The Startup*