





Chai Youxiang

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EDUCATION

Nanyang Technological University

Bachelor of Engineering in Computer Science

Singapore

Aug 2020 – Jan 2024

COURSEWORK

Elective Focus: Artificial Intelligence; Data Science and Analytics

Notable Courses: Computer Vision, Data Structures & Algorithms, Machine Learning, Neural Networks & Deep Learning, Object-oriented Programming, Software Engineering

WORK EXPERIENCE

Ministry of Home Affairs

Software Engineering Intern

Singapore

May 2022 – Dec 2022

- Designed and developed the front-end UI/UX for a mobile/web cross-platform application to track completion rates and progress of users within the department
- Leveraging tools such: Figma for wireframing and collaboration; Node.js, React.js, Typescript and the Ionic framework for front-end development
- Employed a CI/CD pipeline using Microsoft Azure DevOps, GitHub and deployed the application onto Azure Kubernetes Service
- Increased the work productivity and enhanced the user experience of digital services within the department

Ernst & Young (EY)

ASEAN Fintech Intern

Singapore

Aug 2017 – Feb 2018

- Collaborated on and helped maintain a database of 1,000 Global Fintech Startups and 500 Investors for EY's Investor Summit during the Singapore Fintech Festival 2017
- Attended and networked at major Fintech events such as the Singapore Fintech Festival 2017
- Initiated and automated Startup and Investor matching using SQL

PROJECTS

Segmentation with Weak Supervision | *PyTorch, OpenCV, Segment-Anything, Grounding-DINO*

Dec 2023

- Developed a framework for training segmentation models with weak forms of supervision
- Incorporated Meta's Segment-Anything and Grounding-DINO to generate pseudo-labels (segmentation masks) from sparse point annotations
- Fine-tuned a fully connected ResNet50 network based on the pseudo-labels and incorporated dense conditional random fields as a post-processing step for final segmentation mask refinement

Knowledge Distillation Exploration | *PyTorch, Fashion-MNIST, Torchvision*

Oct 2023

- Explored Knowledge Distillation using PyTorch models for classification on the Fashion-MNIST dataset
- Experimented with distilling knowledge from ResNet as the teacher model to MobileNet as the student model using KL-Divergence as the loss function
- Learned about the basics of Knowledge Distillation and its applications in model compression

Run Together App | *React-Native, Firebase, Firestore, Node.js, JavaScript*

Apr 2022

- Developed a mobile application that allows users to run together virtually
- Used React Native and JavaScript for the front-end development and Firebase and Node.js for the back-end development
- Enabled the synchronisation of runners in the same lobby in real-time with the use of Firebase Realtime Database

SKILLS & INTERESTS

Languages: C/C++, Golang, HTML/CSS, JavaScript/TypeScript, Python, SQL (PostgreSQL)

Tools: Bash Shell, Git/GitHub, Google Cloud Platform, Microsoft Azure, VSCode

Frameworks: React, Node.js, Flask, Ionic

Libraries: NumPy, Matplotlib, OpenCV, Pandas, PyTorch, Scikit-learn

Interests: Computer Hardware, Custom Mechanical Keyboards, Personal Audio