

Cheng Yunfeng

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Deep Learning | Python | Circuit Design

EXECUTIVE SUMMARY

I am currently pursuing Masters of Technology in Intelligent Systems in the National University of Singapore. I have learned various deep learning methods such as CNN, RNN, and GAN from my primary specializations and have applied these techniques on various projects. Prior to my masters, during my undergraduate course, my major was electronic information engineering and I applied my expertise in signal processing and hardware design methods to develop several projects.

SKILLS

- **Deep Learning:**
 - Skilled in deep learning models/algorithms: CNN, GAN, etc.
 - Familiar with machine learning frameworks: PyTorch, TensorFlow.
- **Circuit Design:**
 - Circuit analysis and PCB design.

INTERNSHIP

A*STAR, Institute for Infocomm Research, Research Engineer

Feb 2021 – Present

Privacy-Preserving Genomic Analysis:

Summary: Apply secure multi-party computation on semi-parallel logistic regression for Genome-Wide Association Studies(GWAS).

Focus: MPC, Logistic regression

PROJECTS

Automatic detection of tennis strokes using Spatio-temporal localization

Oct 2020 – Nov 2020

Summary: In this project, we used the YOWO model to extract spatial-temporal features and draw bounding boxes of different tennis actions such as forehand, backhand and serve on the current frame.

Key: 3D-CNN, Attention-based channel fusion

Fashion AI - Digitalizing Fashion Retailing

Sep 2020 – Oct 2020

Summary: In this project, we developed 3 different intelligent systems. Generating fashion articles for design inspirations; Swapping model clothing style for product marketing; virtual try-on for consumers.

Key: GAN, CycleGAN, Conditional Analogy GAN(CAGAN)

No-reference image quality assessment

Nov 2019 – May 2020

Summary: First, using Siamese network to rank images according to image quality. Then fine-tune on traditional IQA dataset to get absolute image quality scores.

Key: NR-IQA, Siamese network, Learning to rank

Human-computer interaction based on visual hand-gesture recognition

Nov 2018 – Apr 2019

Summary: First, using CNN to recognize different hand gestures. Second, using digital image processing methods to get the central point of the hand. Third, control mouse based on different gestures.

Key: CNN, Digital image processing

Current Signal Detection Device

Jul 2018 – Jul 2018

Summary: In this project, we designed a non-contact sensor current signal device that could detect the amplitude and frequency of the loop signal and display the signal parameters.

Key: Circuit design, Microcontroller Unit

EDUCATION

Master of Technology – National University of Singapore, Singapore

Jul 2020 – Present

Courses: Intelligent Reasoning Systems, Pattern Recognition Systems, Intelligent Sensing Systems, and Intelligent Robotic Systems

GPA: 3.81/5.0

B.Eng. in Electronic Information Engineering – Shandong University, China

Sep 2016 – Jun 2020

Honors & Awards: Outstanding Graduate; Excellent Student Cadre; 1st prize in National Undergraduate Electronic Design Contest

GPA: 86.16/100