

Yicun Liu

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EDUCATION

COLUMBIA UNIVERSITY

M.S IN COMPUTER SCIENCE

Expect. Dec 2019 | New York, NY
cGPA: 3.8/4.0

THE CHINESE UNIVERSITY OF HONG KONG

B.E IN INFORMATION ENGINEERING

Grad. May 2018 | Hong Kong
cGPA: 3.7/4.0

COURSEWORK

GRADUATE

Operating System
Machine Learning
Algorithm Analysis
Advanced Computer Vision
Natural Language Processing
Database Management System

UNDERGRADUATE

Web Programming and Security
Cyber Security and Cryptography
Human Computer Interaction
Distributed Data Science
Computational Finance
Artificial Intelligence
Computer Network
Embedded System

SKILLS

PROGRAMMING

Python • C • C++ • C#

ML FRAMEWORK

PyTorch • Caffe • Tensorflow

DATA TOOLKIT

MATLAB • SQL • Hadoop • Numpy

WEB DEVKIT

HTML • CSS • JavaScript • PHP

LANGUAGES

Fluent/Native : English • Mandarin
Basic : Cantonese • Japanese

SELECTED AWARDS

GRA Fellowship Full Tuition | 2018
Hitachi Limited Scholarship | 2017
ELITE Stream Scholarship | 2017
Michael Wong Scholarship | 2017
Honorable Mention, MCM | 2016

EXPERIENCE

VISION+GRAPHIC CENTER, COLUMBIA CS | RESEARCH ASSISTANT

Sept 2018 - now | New York, NY

- Built a unified system for analyzing user preferences across affinity groups towards international news events. Programmed efficient **web spider APIs** to crawl and parse **20K** user generated multimedia contents from around **10** US/CN video sharing sites.
- Designed state-of-the-art ML model to jointly compare multimodal vision and language **feature representations** the deep canonical embedding space. Developed the refined version of multilingual **BERT** model in **PyTorch**. Work in progress.

SENSETIME RESEARCH | RESEARCH ENGINEER INTERN

May 2017 - July 2018 | Hong Kong

- Optimized the running time and model size of **3D vision** CNNs by light-weighted convolutions and quantization. Designed and implemented customized layer in **C++** and **Caffe** for deployment on embedded devices and smartphones.
- Designed a novel **stereo matching** algorithm for imbalanced binocular input signals. Designed a robust novel view synthesis framework with fine-grained geometric awareness in **CUDA** and **PyTorch**. Work in submission.
- Developed a facial depth estimation network for **IR&RGB** cameras in very dark environment. Exceeded previous SotA by **30%+**.

MULTIMEDIA LAB, CUHK IE | RESEARCH ASSISTANT

Sept 2017 - Dec 2017 | Hong Kong

Designed a selfie-friendly **neural style** algorithm with high fidelity in **skin color** and **facial structure**. Product deployed in Android. Work published in ACML'18.

PROJECTS

MOBILE CAMERA ENHANCER | FINAL YEAR PROJECT

Constructed **Star-GAN** based adversarial network with semantic adaptive loss. Dived deep into investigating the divergence of resolution/noise/color between mobile phones vs **DSLRs**. Established **RAW** based enhancing pipeline.

LINUX KERNEL DEVELOPMENT | COURSE PROJECT

Implemented **syscalls** for customized inter-process communication, scheduling, page sharing and file system. Debugged and registered new modules by **C** in **Linux**. Developed **user-space daemon** to monitor sensor orientation of peripheral device.

SOCIAL COMMUNITY DETECTION | COURSE PROJECT

Detected and identified small communities on social media based on **2.5M** user data. Implemented **Clustering** (BMM/GMM/EM) and **Dimension Reduction** (SVD/PCA) by **Python** and **MapReduce**. Deployed on **Hadoop** and **AWS**.

SECURE E-COMMERCE PORTAL | COURSE PROJECT

Prototyped a website for shopping and administration using **SQLite**, **AJAX**, and **NodeJS**. Designed against potential vulnerabilities (XSS, CSRF, Injections, Session Fixation). Survived **peer-hacking** examination of **50+** peer attackers.

EMBEDDED FLAPPY BIRD | COURSE PROJECT

Transplanted game logic and graphics onto **Cortex-M3** platform. Created new features including multi-player racing mode, multi-touch compatible **driver**.

PUBLICATIONS & PRE-PRINTS

Learning Selfie-Friendly Abstractions from Artistic Style Images, Oral, ACML'18
Visually Imbalanced Stereo Matching, In Submission, 2019