Liang-yu Chen (Charles)

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Education

Columbia University in the City of New York Sep 2020 – May 2022 (Expected)
M.S. Computer Science | GPA: 3.84 *New York, NY*

- Relevant Coursework: Advanced Software Engineering, Advanced Algorithm, Networks, Deep Learning System

Hong Kong University of Science and Technology Sep 2015 – Aug 2019
B.E. Computer Science | GPA: 3.65 *Hong Kong*

- First Honors Graduate, 4 times Dean's List awardee (Top 10% among all)

Skills and Keywords

Expertise: Full Stack Development, Test-Driven Development, Object Oriented Programming, Data Structure, Data Management, Information Retrieval, Image Understanding, Natural Language Processing, Quantitative Analysis

Tools: Google Cloud Platform, Docker, Heroku, Git, Capybara, Cucumber, Spark, MongoDB, Gradle, Linux, Unix

Programming: (*Proficient*) Python, C++, Java, Ruby, (*Familiar*) Shell Scripting, JavaScript, MySQL, CSS/HTML, MATLAB

Framework: Flask, jQuery, Ruby on Rails, Spring, Django, .Net, React, Qt

Libraries: OpenCV, OpenGL, Pandas, Scikit-learn, TensorFlow, PyTorch, NLTK

Industry Experience

Google LLC May 2021 – Aug 2021
Software Engineer Intern *(Virtual) Mountain View, CA*

- Incoming summer intern at Google core assistant team.

ASTRI (Research Institute for AI Technology Products) Oct 2019 – Jul 2020
Engineering Associate *Hong Kong*

- Increased 6% character accuracy for the Chinese OCR system by utilizing Blender and OpenGL to generate over 10,000 photo-realistic documents for lighting correction local binarization algorithm.
- Implemented image understanding models by finetuning ResNet and developed C++ packages for frequently used TensorFlow operations, matrix-tensor conversion, and pre-processing pipelines to accelerate software integration.
- Constructed a text-against-image comparison system backend in C++ for an insurance fraud prevention SaaP by building computational graphs conditioning on user-specified rules to simulate the comparing process.
- Leveraged Selenium CSS selector and applied DFS algorithm to automate crawling process for over 200,000 Chinese news report data and managed data using Apache Spark With MongoDB.

NAVER/LINE Corporation - CLOVA AI Jul 2018 – Sep 2018
Research Intern *South Korea*

- Improved the average top-50 click-through-rate (CTR) from 3.8% to 4.3% with softranking VGG-16 to recommend high CTR banners and integrated to the C++ backend of CLOVA AI advertisement generator module.
- Utilized NAVER AutoML platform (NSML) with Docker to monitor and train Pytorch models with improved reproducibility.

Selected Projects

LINE Diet Assistant Chatbot [GitHub]
Utilized: Java (Spring), PostgreSQL, Webhook, Gradle, Heroku, Git, Design Patterns

- Developed the chatbot backend server with deterministic finite-state machine to control application process flow and handle Webhook events with LINE Messaging API for diet plan assistance.
- Deployed on Heroku and configured the server with database and logging add-ons as PostgreSQL and Papertrail.
- Employed Agile test driven development by creating over 100 cases for unit/module testing with Gradle.

Hong Kong Job Matching Platform (Startup) [Website]
Utilized: Python (Django), SQLAlchemy, jQuery, Bootstrap, HTML/CSS, reCAPTCHA, Heroku, Git

- Developed RESTful API and constructed a registration system with email/SMS verification and password reset features.
- Monitored the web application performance with Pingdom to identify features requiring future improvements.

Interactive Image Editor [GitHub]
Ultiized: Python, PyQt, Tensorflow, OpenCV, DeepLab, Google Cloud Platform

- Leveraged Google Cloud Platform GPUs to train a coarse-to-refine WGAN with a PSNR of 23 on natural scene inpainting and integrated with Google DeepLab-v3 semantic segmentation to achieve automatic background restoration.
- Implemented a painting canvas on target images with PyQt to allow drawing inputs for creating foreground masks.

Other Projects: (*C++*)Tetris, Registration System, (*Java*)Warfare Game, (*JS*)Web Game, (*Rails*)Rotten Potatoes