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: 3.95   *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: Backend Development, Data Structure & Algorithm, Object Oriented Design & Programming, Test-Driven Development, Deep Learning, Federated Learning, Computer Vision, Nature Language Processing

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

Framework: Flask, jQuery, Ruby on Rails, Spring, Django, Qt

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

Others: Git, Google Cloud Platform, Protobuf, Docker, Heroku, Spark, MongoDB, Gradle, Unix

INDUSTRY EXPERIENCE

Google LLC   May 2021 – Aug 2021
Software Engineering Intern at Core Assistant   *Remote, NY*
- Extended assistant federated learning framework with a score-based collection infrastructure to resolve data bias issues.
- Reduced runtime training memory of federated active speaker detection by ~70% with lightweight MobileNetV3.
- Reconstructed on-device training pipeline with TensorFlow Federated and published guides to facilitate collaboration.

ASTRI   Oct 2019 – Jul 2020
Engineering Associate   *Hong Kong*
- Constructed modules for exporting TensorFlow quantized model and runtime inference to expedite development.
- Built a text-image comparison system in computational graphs to aggregate model predictions with specified rules.
- Developed web crawling tools with Selenium CSS selector and applied DFS to collect over 200,000 news reports.

Naver Corporation   Jul 2018 – Sep 2018
Research Intern at CLOVA AI   *South Korea*
- Improved average top 50 advertisement click-through rates from 3.8% to 4.3% by applying SoftRank loss on VGG-16.
- Constructed data preprocessing pipeline for ranking losses and conducted hyper-parameter tuning with autoML tools.

SELECTED PROJECTS

(Startup) Hong Kong Job Matching Platform [Website]
Utilized: Python (Flask), SQLAlchemy, jQuery, Bootstrap, HTML/CSS, reCAPTCHA, Heroku, Git
- Constructed RESTful API with a registration system using two-factor authentication to mitigate fake accounts issues.
- Leveraged object-oriented design on data models for job enrollment and implemented using SQLAlchemy automap.

LINE Diet Assistant Chatbot [GitHub]
Utilized: Java (Spring), PostgreSQL, Webhook, Gradle, Heroku, Git, Design Patterns
- Developed chatbot backend with deterministic finite-state machines to handle Webhook events for diet plan assistance.
- Employed Agile test-driven development by creating over 100 unit tests with Gradle and reached over 90% coverage.

Interactive Image Editor [GitHub]
Ultiized: Python, PyQt, Tensorflow, OpenCV, DeepLab, Google Cloud Platform
- Built a foreground removal widget by integrating DeepLab-V3 segmentation with coarse-to-refine inpainting models.
- Implemented a painting canvas with PyQt to allow on-image drawing inputs for foreground masks generation support.

Research Projects: Zero-shot Learning under Low Resource Data, Accent Conversion for Foreign Speakers

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