

Qiuyu Tang

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EDUCATION

- Lehigh University** Bethlehem, PA
• *Master of Science - Computer Science and Engineering; GPA: 3.64* Aug. 2021 - May 2023
Courses: Computer Vision, Media Forensics, Network Security, Data Mining, Adv Programming Techniques, Adversarial Machine Learning, Knowledge Representation
- Wuhan Institute of Technology** Wuhan, China
• *Bachelor of Engineering - Computer Software Engineering; GPA: 3.32* Sept. 2016 - Jun. 2020
Courses: Operating System, Database, Basic Programming, Adv Mathematics, Discrete Structure, Computer Network, Linear Algebra, Object-oriented Programming, Software Engineering

EXPERIENCE

- Research Assistant - Lehigh University Computer Vision Lab** Bethlehem, PA
• *Visual Summarization* Feb. 2023 - May 2023
 - Cooperate with Celebr8 Life Company provide them with CV-related technical support: Organize photos and easy to share
 - Image Clustering based on Landscape:** Invoke pretrained CLIP model created by OpenAI on Google Landmark dataset and Places365 dataset, the highest accuracy is 72.95%
 - Image Clustering based on faces:** Achieve the face clustering by races for now
- Independent Study - Dr. Aparna Bharati's Lab** Bethlehem, PA
• *Research on Image Manipulation Detection* Aug. 2022 - Dec. 2022
 - Generate a manipulated dataset based on COCO dataset:** Good for a follow-up study on dataset bias and creating baselines for image manipulation detection.
 - Implements on existing work:** Build baselines of RGB-N, SPAN, and ManTraNet and evaluate with AUC.
- 2022 HPC Parallel Programming Workshop** Bethlehem, PA
• *Participant* Jul. 2022
 - Utilize High Performance Computing:** Run parallel programs with basic languages, Fortran90 and C. Allocate resources to Lehigh University SLURM nodes using OpenMP, OpenACC and MPI, which support multi-platform shared-memory multiprocessing programming.
 - Trained skills:** Program using Fortran90 and C. Interfaces containing OpenMP, OpenACC and MPI.
- Artificial Intelligence Laboratory of WIT** Wuhan, China
• *Research on Robot's Gesture Recognition* Jun. 2019 - Feb. 2020
 - Study factory robotic arm's gesture:** Aim to avoid vicious wounding incident
 - Synthesize own dataset:** Captured thousands of images and videos of factory robotic arm and lined up its structure
 - Trained skills:** Program with Python and Tensorflow
- Zhenjiang Geek Talents Training Camp Corp.** Zhenjiang, China
• *Intern* Feb. 2019 - Apr. 2019
 - Work on Pygame:** Developed a game named Jump and applied the neural network into the game to win
 - Trained skills:** Wrote the demo with Pygame. Trained AI to play the game using Keras and NN. Presented the game and AI version with a website using Bootstrap and Javascript.

PROJECTS

- Platform Provenance Analysis of JPEG-compressed Image (Media Forensics):** Analyze images compressed by online social networks.
Tech: Python, PyTorch, OSN, TensorFlow, EXIF, JPEG Compression (Mar. '23 - May '23)
- Visual Summarization (Computer Vision):** Recognize semantic contents and cluster similar images.
Tech: Python, PyTorch, CLIP, RFW, Google Landmark, Places365, Fairface (Feb. '23 - May '23)
- Image Manipulation Detection (Media Forensics, Computer Vision):** Based on existing work, aim to build a finer detector.
Tech: Python, PyTorch, TensorFlow, RGB-N, ManTraNet, SPAN, PSCC-Net, BusterNet, OSN, Korus, IMD2020, MFC18 (Aug. '22 - Dec. '22)

- **Multi-modal Transformer for Deepfake Detection (Transformer, Deepfake, Computer Vision):** AI model to detect Deepfake based on transformer using both image and audio.
Tech: Python, OpenCV, transformer (Sept. '22 - Nov. '22)
- **Backdoor Attack Benchmark (Adversarial Machine Learning):** Benchmark containing five existing state-of-the-art backdoor attacks on two datasets.
Tech: Python, PyTorch (Oct. '22)
- **Implementation and Comparison about different clustering algorithms (Data Mining, Machine Learning, Clustering):** Apply KNN, SVM, and two-layer CNN on 3 different datasets, YaleB, PIE, MNIST.
Tech: Python, KNN, SVM, CNN (Apr. '22)
- **Survey on Information Extraction (Knowledge Representation):** Wrote a survey about the history of Information Extraction in the AI field and compare existing work. (May '22)
- **Analysis and Prediction of COVID-19 New-Cases (Big Data Analysis):** Made a successful prediction of the coming Christmas explosion.
Tech: Python, Scala, Spark, PyTorch (Dec. '21)
- **Research and Application of Face Recognition based on Python (Computer Vision):** Implement several face recognition approaches and make comparisons of them.
Tech: Python, Tensorflow (May '20)
- **WeChat mini-app - Game 'Jump' (Game & AI):** Developed a game using PyGame, implemented AI on it, and present it with a website.
Tech: Python, PyGame, HTML5, Bootstrap, Javascript, Tensorflow (Mar. '19)
- **Academic management system (System Design):** Built a web system in which students have access to check information and teachers can hold online exams.
Tech: Java, Maven, MySQL, Javascript (Nov. '18)

SKILLS SUMMARY

- **Programming:** Python, C, C++, SQL, JAVA, Scala
- **Front-End:** JavaScript, HTML5, CSS, Hugo
- **AI-related:** OpenCV, Scikit, PyTorch, Tensorflow, Keras, Fast R-CNN, Transformer, CLIP
- **Tools:** Docker, GIT, MySQL, Singularity, Apache, Weka, L^AT_EX, Jupyter, Tableau, Hadoop, Maven
- **Operating System:** Mac OS, Ubuntu, Windows
- **Language:** Proficient in English and Chinese
- **Soft Skills:** Leadership, Event Management, Writing, Public Speaking, Time Management

HONORS AND AWARDS

- 2018 Scholarship of WIT Computer and Science College
- Best Volunteer for 2017 Wuhan Marathon
- Excellent Leader for Animal Protecting Program - 2017

VOLUNTEER EXPERIENCE

- **Orientation Ambassadors** BethlehemPA
Service as Ambassadors for newbie graduate students. Aug. 2022
- **Lead volunteer at Wuhan Marathon** Wuhan, China
Conducted a group of volunteers to deliver supplements for the runners. Apr. 2017
- **Leader & Volunteer at Small Animal Association** Wuhan, China
Organized events, conducted weekly protecting and visiting animal activity. 2016 - 2018

LEADERSHIP EXPERIENCE

- Vice President · Young Volunteers Association (2016 - 2018)
- Vice President & Founder · Jiuge Chinese Costume Club (2017 - 2018)