JIAXIN LIU

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EDUCATION

Brown University,Providence, RI — May 2023(Expected)
Master of Science in Computer Science

University of Electronic Science and Technology of China, Chengdu, China — Sept 2016 — June 2020
Bachelor of Engineering in Computer Science and Technology (GPA: 3.85/4)

RELEVANT COURSES

- Computer Vision
- Deep Learning
- Data Structure and Algorithm
- Computer Operating System
- Computer Networks
- Software Engineering(java)
- Artificial Intelligence
- Spatial Information Database
- Comprehensive Design

RELEVANT EXPERIENCE

Brown University Computer Vision Course, Providence, RI — Sept 2021 — Dec 2021
Final Project

· Reimplement CycleGAN on images and videos through pytorch.
· Resize images, permute channels, convert them into normalized tensors through DataLoader and transforms.
· Construct neural networks of generator and discriminator by convolve and residual blocks.
· Enable function of saving and loading of models and optimizers to simplify training process.
· Apply generator models to frames reading by cv2 to transfer style of videos. result videos.

UESTC AI LAB, Chengdu, China — Sept 2019 — June 2020
Supervisor: Prof. Quan Wen

· Structured application of quantum theory on Machine Learning and determined topic of undergraduate thesis Design and Optimization of Dimensional Reduction Algorithm Based on Quantum Computing.
· Constructed density matrix with HHL algorithm, Hermitian Chain Product, and kernel methods
· Computed the principal eigenvectors and corresponding eigenvalues with quantum phase estimation.
· Presented nonlinear data classification algorithm with swap test and and generalized it to quantum field.

Universal Village in MIT, Boston, MA — Jan 2019 — Feb 2019
Supervisor: International Chair.Yajun Fang

· Built Stochastic Gradient Descent + Momentum Model to classify MNIST(set of 60000 handwriting images of numbers) to achieve 90.5% accuracy and took advantages of numpy tricks to finish training within 1 second
· Fabricated Hybrid Image with convolution based on Gaussian blur filter and Fast Fourier transform
· Operated Local Feature Matching with Harris Corner Detection and SIFT descriptor Formation, whose accuracy reaches 96% for top 50 key points.
· Cooperated with other researchers, proposed framework on reducing energy consumption and published the paper, Manufacturing and Recycling in Product Lifecycle: New Challenges and Trends ,in IEEE.

Mathematical Modeling Competition in UESTC, Chengdu, China — May 2018 — June 2018

· Developed an optimization model based on directed graph and linear programming to aid distribution of shared bicycles on campus and maximize economical profits for corporations.
· Quantified the demanding number of shared bicycles on specific time and location as streams and summarized as a Normally distributed random variable.
· Calculated standard deviation of stream of bicycles, generated corresponding randomized deviation matrix and built the final optimization model to determine the initial distribution of bicycles to lower the cost.

Big Media Computation Center in UESTC, Chengdu, China — Apr 2018 — June 2018
Supervisor: Prof. Jie Shao

· Solved the problem of reasonable distribution of cameras on campus with combination of algebra, Information Entropy and teamwork skills.
· Participated in Undergraduate Research Program(URP), Calibrated Image Retrieval and improved the algorithm for fixing the coordination of points with the assistance of seniors in the laboratory.