

Brian Chen

SEEKING DEEP LEARNING RESEARCH INTERN · SOFTWARE ENGINEERING INTERN

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Education

University of Illinois at Urbana Champaign (UIUC)

B.S. IN COMPUTER SCIENCE

- GPA: 3.90/4.00, **Technical GPA: 3.96/4.00**, Expected Graduation Date: Dec. 2021

Illinois, USA

Aug. 2018 - Present

National Taiwan University (NTU)

VISITING STUDENT IN COMPUTER SCIENCE AND INFORMATION ENGINEERING

- Fall 2020, one semester visiting student
- GPA: 4.3/4.3

Taipei, Taiwan

Sep. 2020 - Jan. 2021

Experiences

Undergraduate Research Assistant

VISION & LEARNING LAB, SUPERVISED BY PROF. YU-CHIANG FRANK WANG

- Worked on unsupervised learning for 3D representation learning of different types of representation such as meshes and point cloud
- Conducted 3D mesh data augmentation to improve performance of representation learning

Taipei, Taiwan

Sep. 2020 - Present

Deep Learning Research Intern

DATA ANALYTICS GROUP, NATIONAL CENTER OF SUPERCOMPUTING APPLICATION (NCSA)

- Data preprocessing for videos with cv2, pandas
- Built a temporal convolutional network with transfer learning for **action recognition** of wildlife animals, by tensorflow and keras
- Worked on a real-world sea turtle dataset and achieve **98% frame-wise accuracy** @ 1 fps
- Familiar with Linux system, cluster job scripts, distributed learning
- Communicated with researchers in biology and met their needs

Illinois, USA

Jun. 2020 - Present

Undergraduate Research Assistant

CV LAB, SUPERVISED BY PROF. DAVID FORSYTH

- Utilized differentiable soft rasterizers and mesh representation to improve the real-time prediction frequency of **semantic segmentation**
- Implemented a customized subdivision method for higher accuracy at boundaries of semantic masks
- Experienced with PASCAL VOC, COCO dataset

Illinois, USA

Feb. 2020 - Present

PyTorchFI Contributor

HACKILLINOIS

- Developed a runtime perturbation tool (PyTorchFI) for DNNs, implemented for PyTorch
- Refactored the fault injector that was originally only for CNN so that it can inject error into specific parts of RNNs and LSTMs for testing models' robustness to unexpected errors

Illinois, USA

Feb. 2020

Projects

Generate Human Face Sketches

COMPUTATIONAL PHOTOGRAPHY COURSE TEAM PROJECT

- Generated human face sketch from actual human face photo using GAN
- Produced pencil human face sketch by randomly drawing curves based on specified criteria with K-means method to improve the quality

Illinois, USA

Nov. 2019 - Dec. 2019

UIUC International Students Population Visualization

DATA SCIENCE AND VISUALIZATION COURSE PROJECT

- Created a pie chart for international students population at UIUC from 1992 to 2018 using html and D3.js
- Dynamic size and color of pie chart to indicate the total enrollments and sex ratio, respectively

Illinois, USA

Apr. 2019

Honors & Awards

2020	NCSA Fiddler Innovation Undergraduate Student Fellowship Award , Illinois Emerging Digital Research and Education in Arts Media (eDream) Institute	Illinois, USA
'18-'20	College of Engineering Dean's List , Grainger College of Engineering, UIUC	Illinois, USA

Presentation

NCSA Undergraduate Research Symposium	Illinois, USA
PRESENTER FOR AI SYSTEM IN IDENTIFICATION OF WILDLIFE ANIMALS	Jul. 2020
<ul style="list-style-type: none"> Introduced the application of deep learning to video analysis in other fields Introduced how deep learning and computer vision model solved and answered the biological question 	

Skills

Programming	Python, JAVA, C++, LaTeX
Libraries/Packages	Keras, TensorFlow, PyTorch, OpenCV
Machine Learning	optimization, CNN, DNN, RNN, LSTM, GAN, VAE, GMM, EM, HMM, RL, Q-Learning
Languages	English, Mandarin, Japanese

Relevant Courses

UIUC	Machine Learning, Applied Machine Learning, Computational Photography, Introduction to Algorithms & Models of Computation, System Programming, Database System, Advanced Computer Vision (grad. level) , AI and Computer Graphics (grad. level)
NTU	Deep Learning in Computer Vision, Distributed Machine Learning System, Privacy and Security of Machine Learning

Teaching

Machine Learning	Illinois, USA
COURSE ASSISTANT	Sep. 2020 - Dec. 2020
<ul style="list-style-type: none"> Designed and developed the final project topic for the course Responsible for building baseline model and setting up Kaggle competition 	