Yongxu JIN

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RESEARCH INTERESTS

Research Interests | **Computer Graphics, Computer Vision, Machine Learning**

EDUCATION BACKGROUND

Sep.2015-Present
(Expected June. 2019)

Shanghai Jiao Tong University

Bachelor of Engineering, Major in **Software Engineering**

Overall GPA: **3.73/4.3 (3.63/4.0, 88/100)**   Major GPA: **3.81/4.0, 90/100**

TOEFL: 104 (R29 L28 S23 W24)   **GRE:** 328 (V158 Q170 AW 3.5)

SKILLSET

Languages | Python, JAVA, C/C++, MATLAB, HTML, CSS, JavaScript, SQL, UML

Machine Learning | Numpy, Sklearn, Caffe, Tensorflow, Keras

Graphics / Vision | OpenGL, GLSL, Unity, ODE, OpenCV, Skimage

RESEARCH EXPERIENCES

Jul.2018-Sep.2018

Optimal Gait and Form of Animal Locomotion

Advisor: Dr. Weiwei XU, State Key Lab of CAD&CG, Zhejiang University

- Studied the basics of physical simulation and numerical optimization, and learned to optimize gait and form using an inner loop (SQP) and an outer loop (CMA)
- Derived the optimization function of optimizing gait and form, tried to compute its derivative manually and using automatic differentiation techniques
- Implemented the optimization code using C++ language, rigidbody simulation and SQP library.
- Planned to refine the code and do experiment on the optimization algorithm in the future

Skills Involved | **C++, Rigidbody Simulation, SQP, Automatic Differentiation**

Sep.2017-Jun.2018

Cartoon Image Dataset Collection and Classification using customized DNN

Advisor: Dr. Xubo YANG, Digital ART Lab, Shanghai Jiao Tong University

- Obtained the basal dataset of the cartoon images from the web crawler and expanded the dataset with three methods:
  - ➢ Wrote NPR shader on the 3D models got online and obtained the snapshots from various angles
  - ➢ Used a special algorithm to give cartoons the texture of pencils or crayons and collected image data in different styles
  - ➢ Converted the 2D image to 3D via MagicToon (AR application) and collected all snapshots
- Proposed a neural network architecture to optimize cartoon image recognition with three methods:
  - ➢ Inputs Unified Stylization(IUS)-- unified styles of the input images to reduce the complexity of training
  - ➢ Feature Inserted Network(FIN)-- inserted special features of images into neural networks to improve accuracy
  - ➢ Network Plus Network(NPN)-- used multiple neural networks for concurrent training

Skills Involved | **Python/MATLAB, MagicToon, Unity Shader, OpenCV, Tensorflow**

Mar.2017-Mar.2018	**Simultaneous Visual Recovery of 3D Human Pose and Shape: Technique and Applications**
Group Leader	*Advisor: Dr. Xu ZHAO, VisionLab, Shanghai Jiao Tong University*

- Systematically studied mechanism of Openpose and SMPLify, took charge of the overall task arrangement, and conducted open source code writing and testing
- Extracted a 2D human pose skeleton from an image, and fit a 3D human model with shape and pose on the 2D skeleton
- Automatically measured the height and BWH of a person from an image, based on a plotting scale in the image

Skills Involved	**Python/C++, Openpose, SMPLify, Caffe**

Sep.2017-Nov.2017	**Morphological Classification of Amazon Rainforest via Satellite Data**
	Advisor: Dr. Mike TAMIR, School of Information, UC Berkeley

- Conducted data pre-processing, including haze removal, data augmentation, etc.
- Implemented data set extension, image contrast optimization and dimensionality reduction
- Compared the classification outcomes processed by Shallow Neural Network and VGG-16 Network, and chose VGG-16 Network as the main classification method
- Improved the VGG-16 Network details and achieved the F2 score of 0.90254 (World Highest 0.93317)

Skills Involved	**Python, PCA, Deep Neural Network, OpenCV, Keras**

Aug.2017	**Text Data Mining and Analysis of Enron Corporation Emails**
	Advisor: Dr. Ning LI, Institute of Computing Technology, Chinese Academy of Sciences

- Managed the email preliminary analysis, XML Data parse, title/ body abstraction
- Conducted the word splitting, lexical reduction of email title/body parts and converted all participles to TF-IDF vectors, and realized vector clustering via LDA and K-means
- Plotted the relationship networks of senders and recipients via Gephi based on the email contents and clustering results

Skills Involved	**Python/JAVA, TF-IDF, LDA, K-means, NLTK, Sklearn, Gephi**

PUBLICATIONS

Sep.2018	Zhou,Yanqing; **Jin,Yongxu**; Luo,Anqi; Chan,Szeyu; Xiao,Xiangyun; Yang,Xubo. **ToonNet: A cartoon image dataset and a DNN-based semantic classification system**, *ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry (VRCAI 2018)*

INTERNSHIP

Dec.2017-Feb.2018	**Shanghai Cloudpense Co., Ltd.**
	Computer Vision Engineer Intern, R&D Department

- Took charge of the invoice picture processing and OCR recognition, and converted images of the invoices into editable texts

Skills Involved	**JAVA, OpenCV, OCR**

HONORS AND AWARDS

Oct.2017	- **National Second Prize** for National College Students Software Innovation Contest
Oct.2017	- Huawei Scholarship (**Top 5**)
Sep.2017	- Scholarship for Academic Excellence-**Class B**, SJTU
Jul.2017	- **4th Place** of HackXSJTU NVIDIA Intelligence Car Innovations
Mar.2017	- Outstanding Students Award, SJTU