

# JUNHAO QIU

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## EDUCATION

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### Oregon Health and Science University

Master of Science

Department of Computer Science & Engineering

*September 2019 - March 2021(Expected)*

GPA: 3.93/4

### South China Agricultural University

*September 2015 - June 2019*

Thesis title: Textile defect detection and classification based on convolutional neural network.(Won the honor of excellent undergraduate thesis. Only 3 out of 108 students won this honor.)

Bachelor of Engineering, Network Engineering

Overall Average Score: 89.21/100

Ranking: 5/108 in sophomore year.

Ranking: 3/108 in junior and senior year.

## RESEARCH INTEREST

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Machine learning and its wide applications.

## PUBLICATION

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### Junhao Qiu, Yihua Hu, et al. Textile Defect Classification based on Convolutional Neural Network and SVM

- Published in The 2nd Artificial Intelligence on Fashion and Textile International Conference(AIFT 2019).
- Recommended to *AATCC Journal of Research* as an excellent paper(Accepted).

## RELEVANT SKILLS

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- Python, Java, C, R, JavaScript, HTML, CSS
- TensorFlow, Keras, OpenCV, scikit-learn, PyTorch, Spark, and some common python libraries
- LaTeX
- Linux, Slurm

## PROJECT

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### Self-supervised learning and medical image analysis

Independent research, July 2020 - Present

Advisor: Dr. Xubo Song

- Apply self-supervised learning to medical images.
- We are currently developing an algorithm that can utilize a large number of unlabeled medical images to improve the effect of the model.
- We are trying to implement a new self-supervised learning model based on hyperbolic space.

### Textile image depth feature extraction and defect detection and classification

Research Team Student Leader, May 2018 - June 2019

- The project focuses on developing multiple methods for extracting deep features of textile images and classifying defects.

- Held regular meetings to discuss the progress of work and report to advisor on time.
- Developed four CNN models to extract the features of textile images and to classify textile defects. The classification accuracy of two models in the validation set can reach 99%.
- Gained experience in reading literature, reviewing and writing English papers.
- Found myself enjoying research.

### **Compare the performance of distributed and serial random forest algorithms**

**Personal research**, February - March 2020

- Implemented a distributed random forest algorithm on the Spark platform; Implemented a mapreduce-based version of the random forest.
- Implemented a serial random forest algorithm that can train big data (above 20G).
- Compared the performance differences between distributed and serial random forest algorithms
- Wrote an 8-page paper using ACL LaTeX template to show my work, with a solid evaluation and excellent results analysis.(This is a comment from the instructor.)
- Gained experience in implementing machine learning algorithms on the Spark platform, and aroused my great interest in distributed machine learning.

### **Design an 8-bit 5-stage pipeline-less experimental CPU and simulate it on a CPU test platform**

**Research Team Leader**, October 2017

- Designed addressing mode, register structure, data representation and memory system
- Designed controller and pipeline architecture
- Coded logic design using VHDL language

## **MEMBERSHIP**

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As a student member in IEEE and the Chinese Computer Federation

## **AWARDS HONORS**

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June 2019, Excellent Undergraduate Thesis, South China Agricultural University;  
 2017-2018, University-level Scholarship, South China Agricultural University;  
 2017-2018, Deans List, South China Agricultural University;  
 2017-2018, Excellent Student Cadre, South China Agricultural University;  
 2017-2018, Outstanding Volunteer, South China Agricultural University;  
 2016-2017, University-level Scholarship, South China Agricultural University;  
 2016-2017, Deans List, South China Agricultural University;  
 2016-2017, Excellent Student Cadre, South China Agricultural University;  
 2016-2017, Advanced Individual in Sports, South China Agricultural University;  
 2015-2016, Outstanding Volunteer, South China Agricultural University.