

# Zhengcheng Song

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<https://song-zc.github.io/> | <https://www.kaggle.com/zcsong>

## EDUCATION

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Master of Science in Electrical and Computer Engineering May 2021  
**University of Florida** Gainesville, FL  
GPA: 3.66/4.00

Bachelor of Engineering in Electronic Information Engineering June 2019  
**Xidian University** Xi'an, China

Summer Program, Applied Information Theory August 2017  
**Cambridge University** Cambridge, UK

## RESEARCH

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### VinBigData Chest X-ray Abnormalities Detection

#### Kaggle competition

- Test VarifocalNet model and YOLOv5 model as base models; test Weighted boxes fusion (WBF) and Non-maximum Suppression (NMS) as pre-processing and ensemble methods.
- Finetune and ensemble a 2 stage 5 folds YOLOv5x model with NMS.

### Lecture Project

#### University of Florida

- Design an MLP, a CNN and a Stacked Autoencoder models for Fashion-MNIST dataset.
- Compare and discuss the selection of hyperparameters and different techniques, such as Dropout and Batch Normalization.
- Finetune each model and compare their performance.

### Bachelors Thesis

#### Xidian University

- Develop a RankIQA model for No-reference image quality assessment (NR-IQA).
- Generate a range of distorted images from original images and use their different rank in degree of distortion to train a Siamese network.
- Finetune one branch of Siamese network on small IQA train set.

### Brain-Computer Interface Summer Program

#### Institute of Brain Cognition and Brain Disease, Chinese Academy of Sciences

- Adopt a proximate method of generating visual stimuli with flexible frequency on 60Hz screen. Collect, clean and filter steady-state visual evoked potentials (SSVEP) signals in six different frequencies.
- Implement a Canonical Correlation Analysis method and a PCA with SVM method to classify SSVEP signals.
- Use SSVEP signal to control a single chip trolley's real time movement.

## SKILLS

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Competent in Python and MATLAB.

Have experience in C++, Verilog, Google Cloud and Docker.