ZHOU Zehua

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EDUCATION

Xi'an Jiaotong University, China (QS: 302)   2017.09 - 2021.07
Bachelor of Computer Science and Technology, GPA: 86.63/100
National Tsing Hua University, Taiwan (QS: 177)   2019.09 - 2020.01
Exchange Student
Tokyo Institute of Technology, Japan (QS: 55)   2021.09 – 2023.07 (Estimated)
Master of Information and Communications Engineering, GPA: 92.3/100

ACADEMIC PROJECTS

Machine part defect detection based on few-shot learning   2022.09-now

- Used SinGAN network to do data enhancement for a small number of corporate-provided part images.
- Used the Anomalib deep learning library to detect small scratches and folded feet in metal defect parts.
- After comparing and improving the effects of different models, the optimal PatchCore model was adopted, and the AUC after training can reach 99.7%.

Target Speaker Extraction in Inactive Cases   2022.08-now

- Used Pytorch-lightning, to build a speaker encoding module, a speech separation module and a speaker detection module, based on the Asteroid speech separation framework.
- Used the SJ0-2mix data set, a total of 40,000 mixed voices with a length of about 5 seconds were cut and processed, and the waveform was used as input. Adopted signal reconstruction (SE-SI-SDR loss), speaker classification (CE loss) and speaker detection (BCE loss) for joint training.
- Used Tensorboard to compare the convergence speed of loss function under different hyperparameters. Separated the test speech and uses SI-SDR to evaluate the separation effect of target speaker's voice. Our model improved the SI-SDR by 9.2% for inactive target speaker scenario.

Android application development   2020.04-2020.06

- Implemented an application with a login verification module, news browsing module, weather report module, and dark mode.
- Enhanced understanding of network communication protocol Http, Socket programming, XMPP protocol and JSON, etc.
- Collaborated with three team members. Also responsible for requirements design and development process control.

SKILLS

Programming Languages:
Python, C++, Shell, MATLAB, SQL

Framework/Tools:
Pytorch, Tensorflow, Espnet, Kaldi

Communication
English (TOEFL 91), Japanese(N2), Mandarin (Native)