

Wenxin Hou

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🌐 <https://github.com/houwenxin>

🐙 <https://houwenxin.github.io/>

🐦 <https://twitter.com/Houba81920225>

EDUCATION

Tokyo Institute of Technology, Tokyo, Japan

Master of Engineering in Information and Communications Engineering

Sep. 2019 – Sep. 2021 (Expected)

Weighted Average Mark: 92.7 / 100.0

Supervisor: Prof. Takahiro Shinozaki

Nanjing University, Nanjing, China

Bachelor of Engineering in Telecommunications Engineering

Sep. 2015 – Jul. 2019

Weighted Average Mark: 86.6 / 100.0

Thesis: Automatic Chinese Keywords Extraction Based on Seq2Seq Model

EXPERIENCE

Tokyo Institute of Technology, Tokyo, Japan

Teaching Assistant

May. 2020 – July. 2020

- Speech Information Technology (2020) - Instructor: Prof. Takahiro Shinozaki

Tokyo Institute of Technology, Tokyo, Japan

Research Assistant

Nov. 2019 – Present.

Supervisor: Prof. Takahiro Shinozaki

- Research on unsupervised / few-shot sound anomaly detection of rotating machine based on deep learning (in progress)
- Implemented variational convolutional autoencoder model and achieved 2% performance in F1-score
- Introduced attention-based memory module to further improve F1-score by 50% after one-shot learning

Turing AI Institute of Nanjing, Nanjing, China

Machine Learning Intern

Apr. 2019 – Aug. 2019

Supervisor: Prof. Jian Li

- Investigated on back-test profitability of stock factors and researched on machine learning for stock prediction
- Developed a local demo system supporting automatic data pre-processing, model training and predicting
- Achieved an annualized rate of return of 38.58% in back-test with LightGBM model

PROJECT EXPERIENCE

Large-Scale Multilingual Speech Recognition and Language Identification

Guide: Dr. Takahiro Shinozaki

Feb. 2020 – May. 2020

- Employed Transformer-based CTC/Attention hybrid architecture for end-to-end multilingual speech recognition, achieved average character error rate of 27.8% and language identification accuracy of 93.5% on 42 languages
- Investigated into its transfer performance on low-resource languages

PUBLICATIONS

1. **Wenxin Hou**, Yue Dong, Bairong Zhuang, Longfei Yang, Jiatong Shi and Takahiro Shinozaki, "Large-Scale End-to-End Multilingual Speech Recognition and Language Identification with Multi-Task Learning", in Proc. INTERSPEECH, Shanghai, China, October 2020. [\[paper\]](#)
2. Mingxin Zhang, Tomohiro Tanaka, **Wenxin Hou**, Shengzhou Gao and Takahiro Shinozaki, "Sound-Image Grounding Based Focusing Mechanism for Efficient Automatic Spoken Language Acquisition", in Proc. INTERSPEECH, Shanghai, China, October 2020. [\[paper\]](#)
3. Shengzhou Gao, **Wenxin Hou**, Tomohiro Tanaka and Takahiro Shinozaki, "Spoken Language Acquisition Based on Reinforcement Learning and Word Unit Segmentation", in Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Barcelona, Spain, May 2020. [\[paper\]](#) [\[slide\]](#)

HONORS & AWARDS

JASSO Honors Scholarship

2019

Excellence in Nanjing University Training Program of Innovation for Undergraduates

2019

Nanjing University Renmin Scholarship (2nd class)

2018

Nanjing University Excellent Student

2018

Nanjing University Renmin Scholarship (3rd class)

2017

Third Prize in China Undergraduate Mathematical Contest in Modeling (Jiangsu Province)

2017

SKILLS

Operating Systems: Windows XP/7/8/10, Linux

Libraries/Toolkits: Python(PyTorch, Scikit-Learn), ESPnet, Shell, C/C++

Natural Languages: Chinese (Native), English (TOEFL iBT 100, CET-6 602), Japanese (JLPT N2 126)