Shucong Zhang

Phone: +447823709928| Email: dacong001@hotmail.com
Address: The Glebe House, Church Street, Cambridge, CB4 1DT

Summary

- Skilled researcher in automatic speech recognition
- Good publication record in top-tier conferences
- Solid understanding of speech recognition, natural language processing and deep learning
- Extensive experience in developing deep learning models with Python

Education

University of Edinburgh Edinburgh, UK
PhD in Informatics Oct 2017 – Dec 2021

- Supervisors: Prof Steve Renals and Dr Peter Bell
- Thesis: Effective Attention-Based Sequence-to-Sequence Modelling for Automatic Speech Recognition
- Examiners: Dr Hao Tang and Dr Shinji Watanabe

Master of Science in Computer Science Sep 2016 – Sep 2017

- Graduate with Distinction
- Supervisor: Dr Shay Cohen
- Thesis: Training Neural Networks without Backpropagation

Purdue University West Lafayette, IN, US
Bachelor of Science in Mathematics Sep 2011 – Aug 2014

- Graduate with Honours in Mathematics

Employment

Toshiba Cambridge Research Laboratory Cambridge, UK
Research Engineer Aug 2021 – Present

- Developing novel architectures and algorithms for End-to-End automatic speech recognition
- Building speech recognition systems for automatic speech recognition challenges

Toshiba Cambridge Research Laboratory Cambridge, UK
Research Intern Jun 2019 – Oct 2019

- Developed a novel top-down level-wise neural network training method. Achieved state-of-the-art results on benchmark datasets for ASR, image classification, and NLP.
- Developed a novel transfer learning method which made CTC ASR models robust to noise. Achieved significant error reductions in all unseen noise conditions.

Publications

Mohan Li, **Shucong Zhang**, Catalin Zorila, and Rama Doddipatla. "Transformer-based Streaming ASR with Cumulative Attention." **ICASSP 2022**

Shucong Zhang, Cong-Thanh Do, Rama Doddipatla, Erfan Loweimi, Peter Bell, and Steve Renals. "Train Your Classifier First: Cascade Neural Networks Training from Upper Layers to Lower Layers." **ICASSP 2021**

Shucong Zhang, Erfan Loweimi, Peter Bell, and Steve Renals. "Stochastic Attention Head Removal: A Simple and Effective Method for Improving Automatic Speech Recognition with Transformers." **INTERSPEECH 2021**

Shucong Zhang, Erfan Loweimi, Peter Bell, and Steve Renals. "On the Usefulness of Self-Attention for Automatic Speech Recognition with Transformers." **IEEE Spoken Language Technology Workshop (SLT) 2021**

Shucong Zhang, Cong-Thanh Do, Rama Doddipatla, and Steve Renals. "Learning Noise Invariant Features Through Transfer Learning for Robust End-to-End Speech Recognition." **ICASSP 2020**

Cong-Thanh Do, **Shucong Zhang**, and Thomas Hain. "Selective Adaptation of End-to-End Speech Recognition using Hybrid CTC/Attention Architecture for Noise Robustness." **European Signal Processing Conference (EUSIPCO) 2020**

Shucong Zhang, Erfan Loweimi, Peter Bell, and Steve Renals. "Windowed attention mechanisms for speech recognition." **ICASSP 2019**

Shucong Zhang, Erfan Loweimi, Yumo Xu, Peter Bell, and Steve Renals. "Trainable Dynamic Subsampling for End-to-End Speech Recognition." **INTERSPEECH 2019**

Teaching Experience

University of Edinburgh — Edinburgh, UK
Tutor — Jan 2019 – May 2019

- Tutored students on machine learning concepts and algorithms.
- Mentored students on deep learning projects.

Purdue University — West Lafayette, IN, US
Teaching Assistant — Aug 2012 – May 2014

- Lectured and tutored students on Object Oriented Programming with Java.

Programming Skills

Python, PyTorch, TensorFlow, Java, C/C++, Unix Shell