

# Dongwei Jiang

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With six years of industry and research experience in speech processing and self-supervised speech models, my focus is now shifting to LLM, with a particular interest in self-improvement and reasoning.

## EDUCATION

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JOHNS HOPKINS UNIVERSITY	M.Eng. in Computer Science	Aug 2023 - Till Now
PEKING UNIVERSITY	B.S. in Geographic Information System	Sep 2011 - June 2016

## RESEARCH EXPERIENCE

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**Mentors: Prof. Daniel Khashabi, Benjamin Van Durme** JHU, Sep 2023 - Till Now  
*Research Assistant. (1) Understanding the underlying reason that prevents LLM from effective self-improvement (2) Distilling rationales from unlabelled data to provide procedural feedback for various reasoning problems*

**Mentor: Prof. Shay B. Cohen** EDINBURGH, Apr 2023 - Dec 2023  
*Research Intern. Solving complex natural language logical reasoning problems with the help of theorem prover Lean*

**Mentor: Dr. Xiangang Li** DiDi, Jan 2018 - Dec 2020  
*Research Scientist. Advancing self-supervised speech processing with MPC and Speech-SimCLR*

## SELECTED PUBLICATIONS

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- [1] **Dongwei Jiang**, Marcio Fonseca, Shay B. Cohen. *LeanReasoner: Boosting Complex Logical Reasoning with Lean*, in NAACL Main Conference, 2024
- [2] **Dongwei Jiang**, Jingyu Zhang, Orion Weller, Nathaniel Weir, Benjamin Van Durme, Daniel Khashabi. *SELF-[IN]CORRECT: LLMs Struggle with Refining Self-Generated Responses*, in submission to COLM, 2024
- [3] **Dongwei Jiang**, Guoxuan Wang, Yining Lu, Andrew Wang, Benjamin Van Durme, Daniel Khashabi. *RATIONALYST: Supervising Reasoning via Self-Supervised Rationale Extraction*, in submission to ENMLP, 2024

## WORK EXPERIENCE

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**SHOPEE** Beijing, Nov 2021 - Nov 2022  
*Led a team of four. Responsible for low-resource ASR and its application in products*

- Low Resource ASR optimization: Used Youtube data crawling and filtration to accumulate weakly supervised training data for the base model. Used self-training to accumulate target domain training data
- Low Resource ASR annotation: Established best practices and helped training of local agent managers
- Product Support: Supported live stream clipping and live stream ongoing content search on the Indonesia market. The model was used as an extra source of supply for product introductory videos, which increased 23,000 orders each day

**YUANFUDAO** Beijing, Dec 2020 - Oct 2021  
*Led a team of six. Responsible for the application of End-to-End ASR and Talking Face Generation*

- Education ASR Optimization: Implemented relevant techniques including code switch and children speech recognition
- Product Support: Supported quality assurance and content understanding for various applications including children's short videos, live lesson streaming, and voice communication, leading to a monthly saving of 900,000 RMB in costs

**DIDICHUXING TECHNOLOGY** Beijing, Jan 2018 - Dec 2020  
*Led a team of five. Responsible for the training/deployment platform of ASR and TTS*

- End-to-End ASR: Implemented LAS and Speech Transformer with Attention + CTC multi-task loss. Implemented AED + CTC joint decoding and word-level WFST with contextual-graph based hotword-fix. Being one of the first to bring end-to-end ASR model online in China, Speech Transformer replaced all hybrid/CTC models for internal products
- End-to-End Streaming ASR: Investigated and implemented prevalent end-to-end streaming speech recognition solutions at the time (Neural Transducer, RNN-T, and Mocha).
- End-to-End TTS: Implemented Tacotron2 and FastSpeech end-to-end Speech Synthesis model with multi-speaker TTS and GST for personalized TTS

**JD.COM INC** Beijing, Jan 2017 - Dec 2017

- Read through Kaldi source code. Learned the concept and implementation of hybrid ASR system. Followed early CTC work from Google and experimented with different network structures, modeling units, and subsampling rate