Jiyang Tang

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EDUCATION BACKGROUND

08/2018-Pesent **Duke Kunshan University** (DKU)
https://dukekunshan.edu.cn/en/about

- **Bachelor of Science in Data Science expected in June 2022 (Teaching Medium: English Only)**
- Cumulative GPA: 3.58/4.0   Major GPA: 3.65/4.0
- **Core Courses**: Computer Vision, Statistical Machine Learning, Interdisciplinary Data Analysis, Algorithms and Databases, Numerical Analysis and Optimization, Advanced Linear Algebra, Principles of Machine Learning, Probability, Random Variables and Stochastic Processes, Introduction to Programming and Data Structures, Mathematical Foundations, Philosophy and Ethics of AI, etc.
- **Honors and Awards**: Dii (DKU iNNOVATION iNCUBATOR) 2020 Batch Funding **(RMB 20,000)**, 12/2020
  DKU Summer Research Program Funding **(RMB 12,800)**, 06/2020
  DKU Undergraduate Entrance Scholarship **(RMB 170,000)**, 08/2018

RESEARCH EXPERIENCES

05/2019-Present   **Research Assistant, Speech and Multimodal Intelligent Information Processing (SMIIP) Lab**
Researcher, DKU Summer Research Program
Signature Work & APSIPA

- Acquired substantial knowledge of Automatic Speech Recognition covering signal processing, acoustic modeling, language modeling, and so forth under Professor Ming Li's supervision
- Wrote a complete speech recognition system for English pronunciation of digits using Python+Numpy without deep learning toolkits
- Constructed a high-quality image dataset of Chinese endemic birds (data were scrape from google images, containing around 100 GB images of around 1,300 bird categories)
- **Computer Aided Pronunciation Training (CAPT) as my research focus**
  - Constructed a CAPT system consisting of a server backend and a mobile app (closed beta) to help international students at DKU learn Mandarin
  - Cooperated with two language experts at DKU Language and Culture Center and student volunteers to continuously optimize the app
  - Implemented Mandarin pronunciation evaluation algorithms (including implementing the core algorithm and porting parts of Kaldi to Cython) and deployed a web server
  - Currently building an L2 learner's Mandarin speech corpus
  - Submitted a paper, **End-to-End Mandarin Tone Classification with Short Term Context Information**, to APSIPA ASC 2021, as the primary author (under review, https://arxiv.org/abs/2104.05657)
- Worked as a remote volunteer during Interspeech 2020, responsible for reviewing conference videos, sending emails, managing zoom meetings, etc.
- Research experience reported on DKU official webpage https://dukekunshan.edu.cn/zh/news/in-data-students-find-thei-truth
- Lab webpage: https://sites.duke.edu/dkusmiip

INTERNSHIP EXPERIENCES

05/2021-08/2021   **Research Assistant Intern, Xiaomi Technology Co., Ltd.**, Beijing, China

- Worked under the supervision of Junbo Zhang and Yujun Wang, who were both distinguished senior researchers at Xiaomi
- Main researcher of a project aiming to improve the existing CAPT system's performance using end-to-end speech recognition algorithms, extended phone sets, scoring strategies, etc.

07/2020-08/2020   **Assistant Software Engineer Intern, iFLYTEK Co., Ltd.**, Chengdu, China

- Participated in projects closely related to *Xunfei Yingyutong*, an AI English pronunciation coaching device using CAPT technology to help the users improve their English proficiency
- Developed software tools for colleagues, such as automatic price monitor for third-party online shops, network traffic diagnosis, etc.

ENTREPRENEURIAL EXPERIENCE

12/2020-Present   **Core Technical Member of Presento Team, Dii (DKU iNNOVATION iNCUBATOR) 2020 Batch**

- Passed the 1st round competition with another 13 teams (14/49)
- Worked with my teammates to build an AI communication coaching app. The app can provide intelligent and personalized evaluation and feedback to improve a person's communication skills
- We developed a multi-modal method utilizing the power of facial emotion detection, speech evaluation, paralinguistics, NLP, and pose estimation
- Mainly responsible for implementing and integrating speech evaluation (including fluency, vocabulary, intelligibility, etc.) and body language detection
- Attended a roadshow hosted by DKU and the Kunshan government in April 2021
- Dii news: https://mp.weixin.qq.com/s/EGfpfsR8mtLrhVbkPEHKGw

LEADERSHIP EXPERIENCES

01/2020-02/2020   **Team Leader, Interdisciplinay Contest in Modeling**

- Won Honorable Mention Prize
- Provided a creative solution to soccer team strategy evaluation using network science and machine learning

03/2020-05/2020   **Deputy Director, Technical Artisans Club, Duke Kunshan University**

- Organized and hosted various large C/C++ training sessions
- Wrote a forum system for DKU
- One of the core contributors to the DKU Online Judge website and the problem set

TECHNICAL SKILLS

- Very familiar with audio signal processing, Automatic Speech Recognition (ASR), and CAPT
- Very familiar with C++ (7 years), Python (5 years), Linux (daily), and Deep Learning/ASR frameworks (daily) including PyTorch, Espnet, Kaldi, etc.
- Very familiar with Git-based software development workflow, and contributed to open-source projects like Espnet, Wenet, etc.
- Familiar with Java
- Some familiarity with Natural Language Processing (Interests, the Dii project, and schoolwork)
- Some experience in computer graphics and mobile development: Unity, Android SDK, Cocoa framework, and Flutter
- Some experience in database related technologies: SQL, PostgreSQL, SQLAlchemy, and MongoDB

MISCELLANEOUS

- Languages: Chinese-Native, English-Advanced
- Designed my own object-oriented programming language and constructed a compiler for it using C++ and LLVM
  https://github.com/tjysdsg/tan
- GRE (Verbal 157, Quantitative Reasoning 169, Analytical Writing 4.0)