

Beilong Tang

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EDUCATION

Duke Kunshan University (DKU) & Duke University Dual Degree

Class of 2025

B.S. in Computer Science (DKU)

Kunshan, China

B.S. in Interdisciplinary Studies; Applied Math & Computational Sciences; Computer Science (Duke) Durham, U.S.

- GPA: 3.858/4.0
- Notable Courses:
 - COMPSCI 309 Elements of Machine Learning – A
 - COMPSCI 311 Computer Network Architecture – A+
 - COMPSCI 402 Artificial Intelligence – A
 - STATS 303 Statistical Machine Learning – A-
 - MATH 302 Numerical Analysis – A+
 - MATH 305 Advanced Topics in Linear Algebra – A+
 - (Duke) COMPSCI 308 Advanced Software Design and Implementation – A
 - (Graduate Course at Duke) ECE 689 Advanced Topics in Deep Learning – A+
 - (Graduate Course at Duke) ECE 572 Introduction to Natural Language Processing – A

RESEARCH INTEREST

Speech Processing, Speech Separation and Enhancement, Natural Language Processing, Deep Learning, IoT, Federated Learning, Edge Computing, AI System

RESEARCH EXPERIENCE

Research Assistant for Speech Separation and Enhancement

May. 2024 – Present

The *SMIIP Lab*, DKU

Supervisor: Dr. Ming Li

- Conduct speech separation and enhancement using discrete tokens and Large Language Models.
- My first-author paper [TSELM: Target Speaker Extraction using Discrete tokens and Language Models](#) is submitted to ICASSP 2025 which is the first to investigate the use of audio tokens and language models for target speaker extraction through comparative experiments and comprehensive metrics.
- Explore discretization methods for mixed speech.

Research Assistant for Federated Learning Project

May. 2023 – Jan. 2024

The *Edge Intelligence Lab*, DKU

Supervisor: Dr. Bing Luo

- Deployed Federated Learning (FL) and Federated Analytics (FA) on Edge Devices.
- Built privacy-preserving health monitoring system using FL and FA on DKU campus.
- Full-stack development for Android and iOS devices.

PUBLICATIONS

Tang, B., & Li, M. (2024). Target Speaker Extraction using Self-Supervised Models and Decoder-only Large Language Models. Manuscript in preparation, planned submission to ICME 2025. [Demo here](#)

Tang, B., Zeng, B., & Li, M. (2024). TSELM: Target Speaker Extraction using Discrete Tokens and Language Models. *arXiv preprint arXiv:2409.07841*. Submitted to ICASSP 2025

Geng, J., **Tang, B.**, Zhang, B., Shao, J., & Luo, B. (2024). Demo: FedCampus: A real-world privacy-preserving mobile application for smart campus via federated learning & analytics. In *Proceedings of the 25th International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc '24)*. ACM.

He, S., **Tang, B.**, Zhang, B., Shao, J., Ouyang, X., Nugraha, D. N., & Luo, B. (2024). Fedkit: Enabling cross-platform federated learning for Android and iOS. In *IEEE INFOCOM 2024 - IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)* (pp. 1–2). <https://doi.org/10.1109/INFOCOMWKSHPS61880.2024.10620662>

TEACHING EXPERIENCES

Teaching Assistant for COMPSCI 201: Intro to Programming and Data Structures

May. 2022 – May. 2023

The *Computer Science Center*, DKU

Instructor: Dr. Jiang Long

- Developed [quiz website](#) using Django framework in Python – no bugs were reported in usage.
- Cooperated with other teaching assistants to come up with new quizzes and teaching plans for the course.
- Covered course material and homework in recitation and lab sections to improve students' grades.

AWARDS

- Dean's List (Fall 2021 & Fall 2022) and Dean's List with Distinction (Spring 2022 & Spring 2023)
- 100% Tuition Scholarship for Undergraduate Program: UGRD Entrance Scholarship, JF Progressive Scholarship
- Summer Research Scholarship (SRS) 2023 & 2024
- Silver Medal, International Genetically Engineered Machine (iGEM) 2023 DKU Team Nov. 2023
 - Developed team wiki page independently.
 - Created a markdown editing website for easy collaboration.
- Nanjing Marathon Top 15% (4567/30000) Oct. 2023
- Yantai's Golden Sands Half-Marathon Top 5% (157/3764) June. 2023
- Champion, One-Kilometer Run, DKU Physical Fitness Test Oct. 2022

SIDE PROJECTS

Research Assistant for Search Engine Research Project Oct. 2022 – May. 2023

The Search So Team, DKU

Instructor: Dr. Jiang Long

- Developed benchmarks to evaluate the performance of our self-developed search engine.
- Created DKU-Wiki in Vue and Django to demonstrate the search engine's functionality.

Leadership & Developer for Student Entrepreneurship Project Oct. 2022 – Jan. 2023

The Roomie Student Entrepreneurship Team, DKU

- Developed an app enabling college students to find roommates based on MBTI personality types.
- Collaborated closely with leadership team members to drive project vision and execution.
- Recruited team members with a passion for programming and relevant technical skills.

Open-Source Developer for Repolab-Quiz May. 2022 – July. 2022

DKU

Instructor: Dr. Jiang Long

- Independently developed a dynamic quiz website using Django that supports fill-in-the-blank questions, multiple-choice questions, and Java programming questions.
- Supported easy quiz generation using formatted Json files.
- Used as teaching material for COMPSCI 201.

SERVICES & LEADERSHIP

- President for DKU Running Club May. 2024 – Present
 - Lead daily practices.
 - Collaborate with other leaderships to build comfortable and inclusive running atmosphere.
 - Compete in cross-countries, half marathons and marathons.
- Vice President for DKU Basketball Club & DKU Basketball Varsity Team Member May. 2021 – Jan. 2024
 - Organized and coordinated basketball events, ensuring smooth execution and participation.
 - Managed financial planning and budgeting for club events and activities.
 - Competed in games representing DKU.
- Volunteer for Duke China US-Summit Aug. 2023
- Drummer for band *Sky Steed* Sept. 2021 – May. 2023
- Volunteer for Health Education Program for high school students Aug. 2021 – Aug. 2022
 - Designed educational posters on vaccines and bacteria to promote health awareness.
 - Delivered engaging presentations to high school students during lunch breaks, fostering understanding of public health topics.

SKILLS & HOBBIES

- **Languages**
 - English (fluent) with TOEFL score of 107, Mandarin (native)
- **Programming Languages**
 - Python, Java, JavaScript, SML-NJ
- **Frameworks and Tools**
 - PyTorch, Django, Vue, MySQL
- **Hobbies**
 - Running, Hiking, Basketball, Free Boxing, Drummer