

# Katsumi Ibaraki

PHD STUDENT IN COMPUTER SCIENCE AND ENGINEERING

*University of Notre Dame, Holy Cross Dr, Notre Dame, IN 46556*

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## Education

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### **University of Notre Dame**

PHD IN COMPUTER SCIENCE AND ENGINEERING

*Notre Dame, IN*

2024 - Present

### **University of Michigan**

MASTER OF SCIENCE IN COMPUTER SCIENCE AND ENGINEERING

*Ann Arbor, MI*

2022 - 2024

- GPA: 4.00

### **Ohio State University**

BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND ENGINEERING, BACHELOR OF ARTS IN JAPANESE

*Columbus, OH*

2018 - 2022

- GPA: 3.91

## Research Experience

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### **University of Notre Dame - Computer Science and Engineering**

SUPERVISOR: DR. DAVID CHIANG

*Notre Dame, IN*

2024 - Present

- Developing data augmentation techniques for low-resource Automatic Speech Recognition
- Analyzing non-speech sounds, such as onomatopoeia

### **University of Michigan - Computer Science and Engineering**

SUPERVISORS: DR. RADA MIHALCEA, DR. WINSTON WU

*Ann Arbor, MI*

2022 - 2024

- Analyzing occupational distribution representation in Japanese language models
- Applying audio processing techniques to analyze animal vocalizations

## Publications

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**Katsumi Ibaraki** and David Chiang. 2025. Frustratingly easy data augmentation for low-resource ASR. Preprint, arXiv:2509.15373.

Artem Abzaliev\*, **Katsumi Ibaraki\***, Kohei Shibata, and Rada Mihalcea. Vocalizations of the Parus minor bird: Taxonomy and automatic classification. In *Proceedings of the International Conference on Animal-Computer Interaction (ACI '24)*, Article 8, pages 1–10, New York, NY, USA. Association for Computing Machinery. (\* equal contribution)

**Katsumi Ibaraki**, Winston Wu, Lu Wang, and Rada Mihalcea. 2024. Analyzing occupational distribution representation in Japanese language models. In *Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*, pages 959–973, Torino, Italy. ELRA and ICCL.

## Presentations

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### INVITED TALKS

2025. *From Sound to Script: How AI Learns to Write*. DDDLing Forum & Commons Cafe (TUFiSCo, Tokyo University of Foreign Studies), Online.

## Awards, Fellowships, & Grants

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2024	<b>Dean's Fellowship</b> , University of Notre Dame	
2022	<b>D. A. Dickey Scholarship</b> , Ohio State University	\$ 2,500
	<b>Maximus Scholarship</b> , Ohio State University	\$ 2,000
2021	<b>D. A. Dickey Scholarship</b> , Ohio State University	\$ 5,000
	<b>Maximus Scholarship</b> , Ohio State University	\$ 4,000
2020	<b>Maximus Scholarship</b> , Ohio State University	\$ 4,000
	<b>D. A. Dickey Scholarship</b> , Ohio State University	\$ 2,500
2019	<b>Maximus Scholarship</b> , Ohio State University	\$ 4,000
	<b>OSU Grant</b> , Ohio State University	\$ 2,000
2018	<b>Maximus Scholarship</b> , Ohio State University	\$ 2,000
	<b>OSU Grant</b> , Ohio State University	\$ 2,000

## Work Experience · Teaching Experience

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### **Teaching Assistant, CSE 30151: Theory of Computing**

Notre Dame, IN

COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY OF NOTRE DAME

2024 - 2025

- Introduction to formal languages and automata, computability theory, and complexity theory
- Holding office hours and grading assignments

### **Graduate Student Instructor, COMPFOR 302 Alien Anatomy: How ChatGPT Works**

Ann Arbor, MI

COLLEGE OF LITERATURE, SCIENCE, AND THE ARTS, UNIVERSITY OF MICHIGAN

2024

- Developing components of an introductory class for machine learning and large language models, for non-engineering undergraduate students
- Holding office hours, creating assignments, and organizing undergraduate Instructional Assistants

### **Graduate Student Instructor, SI 650 (EECS 549) Information Retrieval**

Ann Arbor, MI

SCHOOL OF INFORMATION/COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY OF MICHIGAN

2023

- Developing components of an information retrieval system, including learning-to-rank and doc2query, for class assignments
- Holding office hours and grading assignments

### **Program Assistant, SI 650 (EECS 549) Information Retrieval**

Ann Arbor, MI

SCHOOL OF INFORMATION/COMPUTER SCIENCE AND ENGINEERING, UNIVERSITY OF MICHIGAN

2023

- Developing key components of an information retrieval system, including the index and ranker, for class assignments

### **Mathematics Instructor**

Novi, MI

JAPANESE SCHOOL OF DETROIT

2022 - 2024

- Instructing high school students on various topics taught in Japan ranging from Algebra to Calculus
- Preparing students for the SAT standardized test math section

### **English Instructor**

Columbus, OH

COLUMBUS JAPANESE LANGUAGE SCHOOL

2021 - 2022

- Taught English grammar and composition to high school students, preparing them for college entrance exams in Japan

### **Private Tutor**

Columbus, OH; Ann Arbor, MI

SELF-EMPLOYED

2017 - 2023

- Tutoring high school students with a focus on mathematics and English
- Preparing students for the EIKEN and TOEFL English Proficiency Exams

## Skills

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### PROGRAMMING

- **Programming Languages:** Python, Java, JavaScript, SQL, C++
- **Machine Learning:** PyTorch, TensorFlow, scikit-learn
- **Natural Language Processing / Speech:** NLTK, Hugging Face, epitran, librosa, pydub, soundfile
- **Computer Vision / Multimodal:** OpenCV, Torchvision

## Outreach & Professional Development

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### SERVICE AND LEADERSHIP

#### Organizer

*Notre Dame, IN*

##### MIDWEST SPEECH AND LANGUAGE DAYS 2025, UNIVERSITY OF NOTRE DAME

*2025*

- Coordinated logistics for a two-day regional speech and language research conference, including scheduling, attendee registration, and accommodation.
- Chaired a talk session, introducing presenters and facilitating audience Q&A.

#### Blog Writer

*Ann Arbor, MI*

##### AI LAB, UNIVERSITY OF MICHIGAN

*2023 - 2024*

- Planning, writing, and editing blog posts for the AI Lab, to share the CSE graduate students' academic experience, research, and opinions.

#### Vice President

*Columbus, OH*

##### JAPANESE STUDENT ORGANIZATION, OHIO STATE UNIVERSITY

*2020 - 2021*

- Planned and organized Japanese cultural events, overseeing a team of ten board members.
- Successfully attracted 20 to 70 attendees to each online event.

#### Sponsor Relations

*Columbus, OH*

##### JAPANESE STUDENT ORGANIZATION, OHIO STATE UNIVERSITY

*2019 - 2020*

- Negotiated funding and event planning with sponsors.
- Secured two new sponsors and increased the budget by \$550, representing a 32% increase.