

Koji Inoue

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Research Fields

Speech Language Processing, Spoken Dialogue System, Human-Robot Interaction

Work Experience

- 2019 – **Assistant Professor**, *Graduate School of Informatics*, Kyoto University, Japan.
- 2023 **Visiting Researcher**, *Division of Speech, Music and Hearing (TMH)*, KTH Royal Institute of Technology, Sweden.
- 2018 – 2019 **Program-Specific Assistant Professor**, *Graduate School of Informatics*, Kyoto University, Japan.

Education

- 2015–2018 **Ph.D in Informatics**, *Graduate School of Informatics*, Kyoto University, Japan.
Ph.D. thesis: Engagement Recognition based on Multimodal Behaviors for Human-Robot Dialogue
- 2013–2015 **M.S. in Informatics**, *Graduate School of Informatics*, Kyoto University, Japan.
M.S. thesis: Speaker diarization and backchannel detection by combining acoustic and eye-gaze information in poster conversations)
- 2011–2013 **B.S. in Engineering**, *Advanced Engineering School*, Kurume National College of Technology, Japan.

Publications (Selected)

Journal Articles

- 2022 **Koji Inoue**, Divesh Lala, and Tatsuya Kawahara. **Can a Robot Laugh with You?: Shared Laughter Generation for Empathetic Spoken Dialogue.** *Frontiers in Robotics and AI*, volume 9, pages 1–11, 2022.
- 2021 **Koji Inoue**, Divesh Lala, Kenta Yamamoto, Shizuka Nakamura, Katsuya Takanashi, and Tatsuya Kawahara. **An Attentive Listening System for Autonomous Android ERICA: Comparative Evaluation with Human Attentive Listeners.** *Transactions of the Japanese Society for Artificial Intelligence*, volume 36, pages 1–12, 2021.
- 2020 **Koji Inoue**, Kohei Hara, Divesh Lala, Shizuka Nakamura, Katsuya Takanashi, and Tatsuya Kawahara. **A Job Interview Dialogue System That Asks Follow-up Questions: Implementation and Evaluation with an Autonomous Android.** *Transactions of the Japanese Society for Artificial Intelligence*, volume 35, pages 1–10, 2020.
- 2018 **Koji Inoue**, Divesh Lala, Katsuya Takanashi, and Tatsuya Kawahara. **Engagement Recognition by a Latent Character Model Based on Multimodal Listener Behaviors in Spoken Dialogue.** *APSIPA Transaction on Signal and Information Processing*, volume 7, pages 1–16, 2018.

Conference Proceedings

- 2024 **Koji Inoue**, Divesh Lala, Keiko Ochi, Tatsuya Kawahara, and Gabriel Skantze. **An Analysis of User Behaviours for Objectively Evaluating Spoken Dialogue Systems**. In *International Workshop on Spoken Dialogue Systems Technology (IWSDS)*, 2024.
- 2024 **Koji Inoue**, Erik Ekstedt Bing'er Jiang, Tatsuya Kawahara, and Gabriel Skantze. **Real-time and Continuous Turn-taking Prediction Using Voice Activity Projection**. In *International Workshop on Spoken Dialogue Systems Technology (IWSDS)*, 2024.
- 2023 **Koji Inoue**, Divesh Lala, Keiko Ochi, Tatsuya Kawahara, and Gabriel Skantze. **Towards Objective Evaluation of Socially-Situated Conversational Robots: Assessing Human-Likeness through Multimodal User Behaviors**. In *International Conference on Multimodal Interaction (ICMI), Companion Proceedings*, pages 86–90, 2023.
- 2021 **Koji Inoue**, Hiromi Sakamoto, Kenta Yamamoto, Divesh Lala, and Tatsuya Kawahara. **A Multi-party Attentive Listening Robot which Stimulates Involvement from Side Participants**. In *SIGdial Meeting on Discourse and Dialogue (SIGDIAL)*, pages 261–264, 2021.
- 2020 **Koji Inoue**, Divesh Lala, Kenta Yamamoto, Shizuka Nakamura, Katsuya Takanashi, and Tatsuya Kawahara. **An Attentive Listening System with Android ERICA: Comparison of Autonomous and WOZ Interactions**. In *SIGdial Meeting on Discourse and Dialogue (SIGDIAL)*, pages 118–127, 2020.
- 2020 **Koji Inoue**, Kohei Hara, Divesh Lala, Kenta Yamamoto, Shizuka Nakamura, Katsuya Takanashi, and Tatsuya Kawahara. **Job Interviewer Android with Elaborate Follow-up Question Generation**. In *International Conference on Multimodal Interaction (ICMI)*, pages 324–332, 2020.
- 2019 Divesh Lala, **Koji Inoue**, and Tatsuya Kawahara. **Smooth Turn-taking by a Robot Using an Online Continuous Model to Generate Turn-taking Cues**. In *International Conference on Multimodal Interaction (ICMI)*, pages 226–234, 2019.
- 2018 **Koji Inoue**, Divesh Lala, Katsuya Takanashi, and Tatsuya Kawahara. **Engagement Recognition in Spoken Dialogue via Neural Network by Aggregating Different Annotators' Models**. In *INTERSPEECH*, pages 616–620, 2018.
- 2018 Divesh Lala, **Koji Inoue**, and Tatsuya Kawahara. **Evaluation of Real-time Deep Learning Turn-taking Models for Multiple Dialogue Scenarios**. In *International Conference on Multimodal Interaction (ICMI)*, pages 78–86, 2018.
- 2018 Kohei Hara, **Koji Inoue**, Katsuya Takanashi, and Tatsuya Kawahara. **Prediction of Turn-taking Using Multitask Learning with Prediction of Backchannels and Fillers**. In *INTERSPEECH*, pages 991–995, 2018.
- 2017 Pierrick Milhorat, Divesh Lala, **Koji Inoue**, Tianyu Zhao, Masanari Ishida, Katsuya Takanashi, Shizuka Nakamura, and Tatsuya Kawahara. **A Conversational Dialogue Manager for the Humanoid Robot ERICA**. In *International Workshop on Spoken Dialogue Systems Technology (IWSDS)*, 2017.
- 2017 Divesh Lala, Milhorat Pierrick, **Koji Inoue**, Masanari Ishida, Tianyu Zhao, and Tatsuya Kawahara. **Attentive Listening System with Backchanneling, Response Generation and Flexible Turn-taking**. In *SIGdial Meeting on Discourse and Dialogue (SIGDIAL)*, pages 127–136, 2017.
- 2016 **Koji Inoue**, Pierrick Milhorat, Divesh Lala, Tianyu Zhao, and Tatsuya Kawahara. **Talking with ERICA, an Autonomous Android**. In *SIGdial Meeting on Discourse and Dialogue (SIGDIAL)*, pages 212–215, 2016.
- 2015 **Koji Inoue**, Yukoh Wakabayashi, Hiromasa Yoshimoto, Katsuya Takanashi, and Tatsuya Kawahara. **Enhanced Speaker Diarization with Detection of Backchannels Using Eye-gaze Information in Poster Conversations**. In *INTERSPEECH*, pages 3086–3090, 2015.

- 2014 **Koji Inoue**, Yukoh Wakabayashi, Hiromasa Yoshimoto, and Tatsuya Kawahara. **peaker Diarization Using Eye-gaze Information in Multi-party Conversations**. In *INTERSPEECH*, pages 562–566, 2014.

Invited Talks

- 2023 IEEE RO-MAN Workshop, Multidisciplinary Perspectives on COntext-aware embodied Spoken Interactions (MP-COSIN).
2021 Otogaku Symposium 2021.
2019 IPSJ-ONE 2019, The 81st National Convention of IPSJ.

Awards (Selected)

- 2023 **Award Winner**, NETEXPLO Innovation 2022.
2023 **Outstanding Article**, Frontiers in Robotics and AI.
2023 **Best Paper Award**, International Workshop on Spoken Dialogue Systems Technology 2023 (IWSDS 2023).
2022 **Minister of Education Award**, Japan Open Innovation Prize (JOIP).
2021 **Outstanding Reviewer Award**, International Conference on Multimodal Interaction (ICMI) 2021.
2020 **Awaya Prize** (Award for Outstanding Presentations of Young Researchers), Acoustical Society of Japan (ASJ).
2013 **Valedictorian**, Advanced Engineering School, Kurume National College of Technology.

Research Grant

Principal Investigator

- 2023 – 2026 **Generation and explanation of laughter based on dialogue semantic understanding**, Grant-in-Aid for Early-Career Scientists, JSPS KAKENHI.
2021 – 2023 **Human-targeted Evaluation of Spoken Dialogue based on multimodal behaviors**, JST ACT-X.
2020 – 2023 **A turn-taking system linked with dialogue understanding and utterance generation**, Grant-in-Aid for Early-Career Scientists, JSPS KAKENHI.
2023 – 2026 **A spoken dialogue system based on estimation of mental state using multimodal processing**, Grant-in-Aid for JSPS Fellows, JSPS KAKENHI.

Co-Investigator

- 2021 **Investigation Research on Science and Technology to Overcome the Division of Human Society and Achieve Harmony**, JST Moonshot Millennium Program.
2020 – 2024 **End-to-End Model for Task-Independent Speech Understanding and Dialogue**, Grant-in-Aid for Scientific Research (A), JSPS KAKENHI.
2019 – 2024 **Intelligent Conversational System for Dialogue Engagement and Rapport with Humans**, Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area), JSPS KAKENHI.

Academic Experience

- 2024 **Local Chair**, 25th Meeting of the Special Interest Group on Discourse and Dialogue (SIGdial 2024).
2020 – 2024 **Editor**, Journal & Transactions of the Japanese Society for Artificial Intelligence.

- 2023 – **Secretary**, Special Interest Group on Spoken Language Understanding and Dialogue Processing (SIG-SLUD), Japanese Society for Artificial Intelligence.
- 2023 – **Secretary**, IEEE Kansai Section Young Professionals.
- 2023 **Topic Editor**, Dialogue with Robots: Constructive Approaches for Understanding Communication, Frontiers in Robotics and AI.
- 2020 **Session Co-Chair**, INTERSPEECH 2020.
- 2020 **Video Presentation Co-Chair**, 21st Meeting of the Special Interest Group on Discourse and Dialogue (SIGdial 2020).

Teaching Experience

- 2021 – **Computer Science Laboratory and Exercise 2**, *Computer Science Course*, Undergraduate School of Informatics and Mathematical Science, Kyoto University.
- 2019 – **Advanced Study in Intelligence Science and Technology 1**, *Department of Intelligence Science and Technology Course*, Graduate School of Informatics, Kyoto University.
- 2018 – **Computer Science Laboratory and Exercise 4**, *Computer Science Course*, Undergraduate School of Informatics and Mathematical Science, Kyoto University.
- 2020 **ILAS Seminar**, *Institute for Liberal Arts and Sciences*, Kyoto University.
- 2019 **Computer Science Laboratory and Exercise 3**, *Computer Science Course*, Undergraduate School of Informatics and Mathematical Science, Kyoto University.