Maryam Sadat Mirzaei

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RIKEN Center for Advanced Intelligence Project, 1-4-1 Nihonbashi, Tokyo, Japan 103-0027

EDUCATION

Kyoto University, Graduate School of Informatics   Kyoto, Japan
Ph.D., Informatics   Mar. 2017

- Dept. of Intelligence Science and Technology, Audio & Speech Processing Group
- Thesis: *"Partial & Synchronized Caption to Foster Second Language Listening based on Automatic Speech Recognition Clues"*

M.Sc., Informatics   Mar. 2014

Teacher Training University, Faculty of Literature and Languages   Tehran, Iran
B.A., Foreign language education and translation studies   Jan. 2009

RESEARCH AND TEACHING INTERESTS

- Machine Learning
- Audio & Speech Processing
- Natural Language Processing (NLP)
- Computational Linguistics
- AI-Mediated Human-Human Communication

- Human-AI Communication
- Computer Mediated Communication
- Language Education Technology
- Computer-Assisted Language Learning (CALL)
- Sociolinguistic Studies

PROFESSIONAL EXPERIENCE

RIKEN Center for Advanced Intelligent Project (AIP)   Kyoto & Tokyo, Japan
Research Scientist, Language Information Access Technology Team   Feb. 2021

- AI-Mediated Human-Human Communication: Research and development on advanced communications through a combination of knowledge bases and machine learning methods for peaceful interactions

Post-doctoral Researcher, Language Information Access Technology Team   Apr. 2020 – Feb. 2021

- AI-Mediated Human-Human Communication: AI for conflict resolution, misunderstanding prediction, and promoting peaceful symbiosis

Post-doctoral Researcher, Human-AI Communication Team   June 2017 – Mar. 2020

- Conversation Envisioning Project: An approach to analyze tacit information of a conversation by focusing on how common ground is formed and updated during conversation, aiming to build conversational agents to interact smoothly with people.
- Intelligent Story Creation Project: Automatically create 3D scenes and animations in Unity 3D from written & oral stories based on NLP, automatic speech recognition, computer vision, and embedded inference engine.

Kyoto University   Kyoto, Japan
Guest Research Associate, Applied Intelligence Information Processing Group   June 2017 – Mar. 2020
Research Assistant, Audio & Speech Processing Lab   Apr. 2012 – Mar. 2017

- Partial & Synchronized Caption project: A novel learner-adaptive captioning system to foster second language listening skills, utilizing automatic speech recognition to synchronize the text and audio along with NLP and corpus-analysis for extracting features to detect & show difficult words/phrases in the caption

Research Assistant, Grad. School of Human & Environment Studies   Oct. 2010 – Mar. 2012

- Theories and practices of developing CALL systems: The use of digital games such as MMORPG and virtual worlds in language education

Iran Language Institute (ILI)   Tehran, Iran
English Instructor   July 2006 – Sep. 2010

SCHOLARLY PUBLICATIONS

Mirzaei, M. S., Meshgi, K., and Sekine, S. (2023) What is the real intention behind this question? Dataset collection and intention classification, In *Proc. of ACL'23*, Toronto, Canada. (submitted).

Mirzaei, M. S., Meshgi, K. (2022). Self-regulated listening experience with smart captioning, In *Proc. of EuroCALL'22*, Reykjavík, Iceland.

Mirzaei, M. S., Meshgi, K., and Sekine, S. (2022). Is this Question Real? Dataset Collection on Perceived Intentions and Implicit Attack Detection, In *Proc. of the ACM Web Conference 2022,* Lyon, France.

Meshgi, K., **Mirzaei, M. S.,** and Sekine, S. (2022). Q-Learning Scheduler for Multi Task Learning using Histogram of Task Uncertainty, In *Proc. of ACL'22, Rep4NLP workshop,* Dublin, Ireland.

Meshgi, K., **Mirzaei, M. S.,** and Sekine, S. (2022). Uncertainty Regularized Multi-Task Learning, In *Proc. of ACL'22, WASSA workshop,* Dublin, Ireland.

Peterson, M., White, J., **Mirzaei, M. S**., & Wang, Q. (2022). A review of research on the application of digital games in foreign language education. *Research Anthology on Developments in Gamification and Game-Based Learning*, 1948-1971.

Mirzaei, M. S., Meshgi, K. (2021). Adaptive Listening Difficulty Detection for L2 Learners Through Moderating ASR Resources, In *Proc. of Interspeech'21,* Brno, Czechia.

Mirzaei, M. S., Meshgi, K. (2021). Facilitating L2 listening through automatic detection of speech and lexical difficulties, In *Proc. of EuroCALL'21*, Paris, France.

Mirzaei, M. S., Meshgi, K., and Nishida, T. (2021). Promoting common ground building in L2 cross-cultural conversations*, In *Proc. of EuroCALL'21*, Paris, France.

Meshgi, K., **Mirzaei, M. S.**, and Oba S. (2020). Adversarial Semi-Supervised Multi-Domain Tracking, In *Proc. of ACCV'20*, IEEE, Kyoto, Japan.

Meshgi, K., **Mirzaei, M. S.**, and Oba S. (2020). Leveraging Tacit Information Embedded in CNN Layers for Visual Tracking, In *Proc. of ACCV'20, IEEE*, Kyoto, Japan.

Mirzaei, M. S., Meshgi, K., and Nishida, T. (2020). Sentence Complexity as an Indicator of L2 Learner's Listening Difficulty, In *CALL for Widening Participation–Proceeding of 2020 EuroCALL Conf.*, Copenhagen, Denmark.

Mirzaei, M. S., Meshgi, K., and Nishida, T. (2020). A Situation Creation System to Enable Experiential Learning in Virtual Worlds for Developing Cross-Cultural Competencies, In *CALL for Widening Participation–Proceeding of 2020 EuroCALL Conf.*, Copenhagen, Denmark.

Mirzaei, M. S., Meshgi, K., Frigo, E., and Nishida, T. (2020). AnimGAN: A Spatiotemporally-Conditioned Generative Adversarial Network for Character Animation, In *Proc. of ICIP'2020*, IEEE, Abu Dhabi, UAE.

Mirzaei, M. S., Zhang, Q., Van der Struijk, S., and Nishida, T. (2019). Towards Conversation Envisioning for Cognitive Robots. In Vallverdú, J., & Müller C.V. (Eds.). Blended Cognition. The Robotic Challenge, Springer Verlag.

Mirzaei, M. S., Meshgi, K., and Nishida, T. (2019). Collaborative Learning through Story Envisioning in Virtual Reality, In *CALL and Complexity –Proceeding of 2019 EuroCALL Conf.*, Louvain-la-Neuve, Belgium.

Mirzaei, M. S., Meshgi, K., and Nishida, T. (2019). Learner-Adaptive Partial and Synchronized Caption for L2 Listening Skill Development, In *CALL and Complexity –Proceeding of 2019 EuroCALL Conf.*, Louvain-la-Neuve, Belgium.

Peterson, M., **Mirzaei, M. S.**, and White, J. (2019). Application of Digital Games in Foreign Language Education: A Review of the Research. New Technological Applications for Foreign and Second Language Learning and Teaching. IGI Global.

Meshgi, K., **Mirzaei**, **M. S.**, and Sekine, S. (2019). Uncertainty Regularized Multi-Task Learning for Text Classification, In *Proceeding of ACML'19 WSL Workshop*, Nagoya, Japan.

Zhang, Q., **Mirzaei, M. S.**, Huang, H., and Nishida, T. (2019). Story Envisioning Framework for Visualized Collective Storytelling in Conversation. In *Proceeding of HCII 2019*, Florida, USA.

Peterson, M., Qiao, W., and **Mirzaei M. S.** (2019). The Use of Network-Based Virtual Worlds in Second Language Education: A Research Review. *Assessing the Effectiveness of Virtual Technologies in Foreign and Second Language Instruction*. IGI Global, pp.1-25. DOI: 10.4018/978-1-5225-7286-2.ch00.

Meshgi, K., **Mirzaei, M. S.**, and Oba, S. (2019). Long and Short Memory Balancing in Visual Co-Tracking using Q-Learning, in *Proceeding of IEEE ICIP 2019*, Taipei, Taiwan.

Mirzaei, M. S., Zhang, Q., Van der Struijk, S., and Nishida, T. (2018). Language learning through conversation envisioning in virtual reality, In *Future-proof CALL: Language learning as exploration and encounters –Proceeding of 2018 EuroCALL Conference*, Jyväskylä, Finland

Mirzaei, M. S., and Meshgi, K. (2018). Automatic Scaffolding for L2 Listeners by Leveraging Natural Language Processing, In *Future-proof CALL: Language learning as exploration and encounters –Proceeding of 2018 EuroCALL Conference*, Jyväskylä, Finland.

Meshgi, K., and **Mirzaei, M. S.** (2018). A comprehensive word difficulty index for L2 listening, *Proceeding of 9th Tutorial and Research Workshop on Experimental Linguistics (ExLing 2018)*, France, Paris.

Van der Struijk, S., Huang, H., **Mirzaei, M. S.**, and Nishida, T. (2018). FACSvatar: An Open Source Modular Framework for Real-Time FACS based Facial Animation. *Proceeding of the 18th International Conference on Intelligent Virtual Agents (IVA2018)*, Sydney, Australia.

Meshgi, K., **Mirzaei, M. S.**, and Oba, S. (2018). Information-Maximizing Sampling to Promote Tracking-by-Detection, In *Proceeding of ICIP 2018*, IEEE, Athens, Greece.

Mirzaei, M. S., Zhang, Q., and Nishida, T. (2018). Conversation Envisioning to Train Inter-Cultural Interactions, In *Proceeding of HCII 2018*, Las Vegas, USA.

Mirzaei, M. S., Zhang, Q., Van der Struijk, S., and Nishida, T. (2018). Conversation Envisioning Framework for Situated Conversation. In M. Mouhoub, S. Sadaoui, O. Ait Mohamed, M. Ali (eds), *Recent Trends and Future Technology in Applied Intelligence. IEA/AIE 2018. Lecture Notes in Computer Science*, vol 10868. Springer, Montreal, Canada. https://doi.org/10.1007/978-3-319-92058-0_50

Mirzaei, M. S., Meshgi, K., and Kawahara, T. (2018). Exploiting Automatic Speech Recognition Errors to Enhance Partial and Synchronized Caption for Facilitating Second Language Listening. *Computer Speech and Language Journal*, Elsevier.

Meshgi, K., **Mirzaei, M. S.,** Oba, S., and Ishii, S. (2017). Efficient Asymmetric Co-Tracking using Uncertainty Sampling, In *Proceeding of ICSIPA 2017*, IEEE, Kuching, Malaysia.

Meshgi, K., **Mirzaei, M. S.,** Oba, S. and Ishii, S. (2017) Active Collaborative Ensemble Tracking, In *Proceeding of AVSS 2017*, IEEE, Lecce, Italy.

Mirzaei, M. S., Meshgi, K., and Kawahara, T. (2017). Partial and synchronized captioning: A new tool to assist learners in developing second language listening skill. *ReCALL Journal*, Cambridge University Press.

Mirzaei, M. S., Meshgi, K., and Kawahara, T. (2017). Listening difficulty detection to foster second language listening with the Partial and Synchronized Caption system. In *CALL in a Climate of Change –Proceedings of the 2017 EuroCALL Conf., Southampton, U.K.* Research-publishing.net.

Mirzaei, M. S., and Kawahara, T. (2017). Detecting listening difficulty for second language learners using Automatic Speech Recognition errors. In O. Engwall, J. Lopes, & I. Leite (Eds). *Proceeding of Interspeech 2017 workshop on Speech and Language Technology in Education (SLaTE 2017)*, Stockholm, Sweden.

Mirzaei, M. S., Meshgi, K., and Kawahara, T. (2016). Automatic Speech Recognition Errors as a Predictor of L2 Listening Difficulties. In *Proceedings of Coling 2016, workshop on Computational Linguistics for Linguistic Complexity (CL4LC, 2016), Osaka, Japan.*

Mirzaei, M. S., Meshgi, K., and Kawahara, T. (2016). Leveraging automatic speech recognition errors to detect challenging speech segments in TED talks. In *CALL Communities and Culture –Proceedings of the 2016 EUROCALL Conf., Limmasol, Cyprus.* Research-publishing.net.

Mirzaei M. S. (2016). Using Automatic Speech Recognition Technology to Assist L2 Listeners. In *Proceeding of the 56 LET National Conference*, Tokyo, Japan.

Mirzaei, M. S., Meshgi, K., Akita, Y., and Kawahara, T. (2015). Errors in automatic speech recognition versus difficulties in second language listening. In F. Helm, L. Bradley, M. Guarda, & S. Thouësny (Eds) *Critical CALL–Proceedings of the 2015 EuroCALL Conf., Padova, Italy.* Research-publishing.net.

Mirzaei, M. S., and Kawahara, T. (2015). ASR Technology to Empower Partial and Synchronized Caption for L2 Listening Development. In S. Steidl, A. Batliner, & O. Jokisch (Eds) *Proceeding Interspeech 2015 workshop on Speech and Language Technology in Education (SLaTE 2015)*, Leipzig, Germany.

Mirzaei, M. S. (2015). Automatic Speech Recognition Errors Enrich Partial and Synchronized Caption to Develop Listening Skill. In *Proceeding of the 55 LET National Conference*, Osaka, Japan.

Mirzaei, M. S., Akita, Y., and Kawahara, T. (2014). Partial and Synchronized Captioning: A New Tool for Second Language Listening Development. In S. Jager, L. Bradley, E. J. Meima, & S. Thouësny (Eds), In

CALL Design: Principles and Practice; Proceedings of the 2014 EuroCALL Conf., Groningen, The Netherlands (pp. 230-236). Dublin: Research-publishing.net.

Mirzaei, M. S., Akita, Y., and Kawahara, T. (2014). Partial and Synchronized Caption Generation to Develop Second Language Listening Skill. In *Workshop Proceedings of the 22nd International Conference on Computers in Education ICCE*, Nara, Japan (pp. 13-23).

Mirzaei, M.S., and Kawahara, T. (2014). Listen More, Read Less: Partial and Synchronized Captions to Train L2 Listening using TED Talks. In *Proceeding of the 54 LET National Conference*, Fukouka, Japan.

TALKS

Toward Adaptive Partial and Synchronized Caption to Facilitate L2 Listening, in FLEAT'19, Tokyo, Japan.

Virtual reality to advance sociocultural knowledge for language learners,in *WorldCALL'18*, Concepción, Chile.

A Data-driven Approach to Generate Partial and Synchronized Caption for Second Language Listeners, In *WorldCALL'18*, Concepción, Chile.

Partial and Synchronized Caption Generation to Enhance the Listening Comprehension Skills of Second Language Learners. In *101 Joint SLP Conf.*, Tokyo, Japan.

Listen More, Read Less: The Use of Technology in Generating Partial and Aligned Captions for Foreign Language Learners. *Kansai Joint Speech Seminar 2013*, Nara, Japan.

SKILLS

Personal	Interdisciplinary Researcher, Leader, Initiator, Creative, Versatile, Problem-Solver, Detail-Oriented, Responsible, Hard-Worker, Self-motivated, Excellent Communication, Managerial, and Learning Skills
Technical	C#, Python, Unity 3D, Virtual and Augmented Reality, TensorFlow (& Keras), PyTorch
Languages	Persian, English, Japanese, French

FUNDING & AWARDS

Received Grants-in-Aid for Scientific Research – JSPS KAKENHI-A   Apr. 2019
- *"Envisioning Common Ground Update in Conversations and Evaluating its Effectiveness in Cross-Cultural Training"*

Received Grants-in-Aid for Scientific Research – JSPS KAKENHI-C   Apr. 2017
- *"Developing a Learner-adaptive Captioning System to Improve Second Language Listening"*

Awarded ICT Innovation 2017 Award, Kyoto University   Feb. 2017
Received Monbukagakusho Scholarship from MEXT, Japan   Apr. 2014 – Mar. 2017
Received Monbukagakusho Scholarship from MEXT, Japan   Oct. 2010 – Mar. 2014

AFFILIATIONS & SERVICES

EUROCALL AI SIG Secretary   Aug. 2022-2024
Memberships: IEEE (Man, Machine & Cybernetics Society & Signal Processing Society), JALT, LET, CALICO, EuroCALL (iCALL SIG and NLP-CALL SIG)
Served as reviewer for multiple journals and conferences: ReCALL, System, EUROCALL, HCII, AAAI, WWW, ACL, NACL, Springer publication.
Program committee and reviewer of IEA/AIE Conference   2019