

SANGWON SEO

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EDUCATION

- Rice University**, Houston, Texas *Aug 2019 - Present*
Ph.D. in Computer Science (Advisor: Prof. Vaibhav Unhelkar)
Research Interest – Human-Centered AI, Human-Robot Collaboration
- Seoul National University (SNU)**, Seoul, South Korea *Mar 2013 - Feb 2015*
M.S. in Bioengineering (Advisor: Prof. Kwang Suk Park)
Thesis – “Performance Enhancement in Heart Rate Variability Analysis with Constrained Missing RR Interval Estimation”
- Seoul National University (SNU)**, Seoul, South Korea *Mar 2009 - Feb 2013*
B.S. in Electrical and Computer Engineering
Thesis – “Multiplexing of Bead-Based Immunoassays using a BioMEMS”

EXPERIENCE

- Human-Centered AI and Robotics Group**, Rice University *Aug 2019 - Present*
Ph.D. student working with Prof. Vaibhav Unhelkar
- Developed data-driven methods to improve teamwork at task time using imitation learning
- Developed methods to learn a generative model of team behavior
- Studied methods to incorporate human knowledge into machine learning
- Coreline Soft**, Seoul, South Korea *Apr 2016 – June 2019*
Associate Research Engineer
- Developed geometric modeling and processing algorithms for the medical domain
- Developed volume and surface rendering pipeline
- Agency for Defense Development**, Daejeon, South Korea *Mar 2015 - Mar 2016*
Researcher
- Developed telemetry system for aircraft
- Biomedical Signal and Information Laboratory**, Seoul National University *Feb 2013 - Feb 2015*
M.S student (Advisor: Prof. Kwang Suk Park)
- Developed signal processing and machine learning algorithms for physiological signals
- Functional & Molecular Imaging System Lab**, Seoul National University *Aug 2012 - Sep 2012*
Research Intern (Advisor: Prof. Jae Sung Lee)
- Designed circuits for time-of-flight PET (Positron Emission Tomography)
- Biophotonics and Nano Engineering Lab**, Seoul National University *Dec. 2011 – Jun. 2012*
Research Intern (Advisor: Prof. Sunghoon Kwon)
- Designed and implemented biomedical microelectromechanical systems (Bio-MEMS)

PUBLICATIONS

- Seo, S., Han, B. and Unhelkar, V.V., “Automated Task-Time Interventions to Improve Teamwork using Imitation Learning”, *22nd International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2023 (Acceptance rate 23.3%)
- Seo, S. and Unhelkar, V.V., “Semi-Supervised Imitation Learning of Team Policies from Suboptimal Demonstrations”, *31st International Joint Conference on Artificial Intelligence (IJCAI)*, 2022 (Acceptance rate 14.9%)
- Seo, S., Kennedy-Metz, L.R., Zenati, M.A., Shah, J.A., Dias, R.D. and Unhelkar, V.V., “Towards an AI coach to infer team mental model alignment in healthcare”, *2021 IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA)*, pp. 39-44, 2021
- Kwon, S., Lee, D., Kim, J., Lee, Y., Kang, S., **Seo, S.** and Park, K., “Sinabro: A smartphone-integrated opportunistic electrocardiogram monitoring system”, *Sensors*, 16(3), p.361, 2016

Hwang, S.H., **Seo, S.**, Yoon, H.N., Baek, H.J., Cho, J., Choi, J.W., Lee, Y.J., Jeong, D.U. and Park, K.S., “Sleep period time estimation based on electrodermal activity”, *IEEE journal of biomedical and health informatics (J-BHI)*, 21(1), pp.115-122, 2015

Kim, J., Kwon, S., **Seo, S.** and Park, K., “Highly wearable galvanic skin response sensor using flexible and conductive polymer foam”, *36th annual international conference of the IEEE engineering in medicine and biology society (EMBC)*, pp. 6631-6634, 2014

Kang, S., Kwon, S., Yoo, C., **Seo, S.**, Park, K., Song, J. and Lee, Y., “Sinabro: Opportunistic and unobtrusive mobile electrocardiogram monitoring system”, *15th Workshop on Mobile Computing Systems and Applications (HotMobile)*, pp. 1-6, 2014

PRESENTATIONS

Towards an Online Approach to Inferring Latent States of Teamwork, *2020 Ken Kennedy Institute Data Science Conference*, Oct. 2020, Houston, TX, *Poster*

Design of Non-Intrusive ECG Sensor Embedded in a Smartphone Cover, *10th International Conference on Ubiquitous Healthcare (uHealthcare 2013)*, Sep. 2013, Yokohama, Japan, *Oral*

HONORS & AWARD

National Scholarship for Science and Engineering, Korea Student Aid Foundation (KOSAF) *Mar 2009*

SERVICE

Reviewer International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2023
International Conference on Advanced Robotics and Its Social Impacts (ARSO), 2023
Robotics and Automation Letters (RA-L), 2021, 2023

Conference Volunteer AAMAS 2023

Teaching assistant COMP 646 (Deep Learning for Vision and Language) , Spring 2023
COMP 440/557 (Artificial Intelligence), Fall 2021

TECHNICAL SKILLS

Programming: c, c++, Python, Javascript, HTML, CSS, Matlab
Software & Tools: CMake, Flask, OpenGL, Git, Vim, Tensorflow, PyTorch, Docker, LaTeX

EXTRA CURRICULAR & OTHERS

SNU Student Venture Network	Mar 2012 - July 2012
SNU College of Engineering Tennis Club	Mar 2010 - Feb 2013
System Administrator , ECE Department at Seoul National University	Mar 2010 - Feb 2011
SNU Mentoring Mentor - online mentoring for local high school students	Sep 2009 - Feb 2010