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, 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, Seoul, South Korea *Mar 2009 - Feb 2013*
B.S. in Electrical and Computer Engineering
Thesis – "Multiplexing of Bead-Based Immunoassays using a BioMEMS"

EXPERIENCE

Unhelkar Lab, Rice University *Aug 2019 - Present*
Ph.D. student working with Prof. Vaibhav Unhelkar
- Identifying and remediating an agent's erroneous task execution and a team's sub-optimal cooperation
- Semi-supervised imitation learning of the team behavior influenced by latent decision factors
- Incorporating prior knowledge or constraints in 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, SNU *Feb 2013 - Feb 2015*
M.S student (Advisor: Prof. Kwang Suk Park)
- Developed signal processing and machine learning algorithms for biomedical signals

Functional & Molecular Imaging System Lab, SNU *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, SNU *Dec. 2011 – Jun. 2012*
Research Intern (Advisor: Prof. Sunghoon Kwon)
- Designed and implemented biomedical microelectromechanical systems (Bio-MEMS)

PUBLICATIONS

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

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, *Oral*

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", *2014 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

Paper Reviewing Robotics and Automation Letters (RA-L), 2021

OTHER EXPERIENCE

System Administrator, ECE Department at SNU, Mar 2010 - Feb 2011
SNU Mentoring Mentor - online mentoring for local high school students, Sep 2009 - Feb 2010
Teaching Assistant for Artificial Intelligence (COMP 440), Fall 2021

TECHNICAL SKILLS

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

EXTRA CURRICULAR

SNU College of Engineering Tennis Club, Mar 2010 - Feb 2013
SNU Student Venture Network, Mar 2012 - July 2012