

Ju Cheol Moon

ECS-532, 1250 Bellflower Boulevard, Long Beach, California 90840
jucheol.moon@csulb.edu • +1 (562) 985-8370

RESEARCH INTERESTS EDUCATION

Deep Learning, Machine Learning, Data Science, Bioinformatics, Algorithms.

Iowa State University, Ames, Iowa, USA

Doctor of Philosophy (Ph.D.) in Computer Science

Aug 2012 – Aug 2017

- Dissertation: Synthesizing Species Trees from Gene Trees Using the Parameterized and Graph-theoretic Approaches

South Dakota State University, Brookings, South Dakota, USA

Master of Science (M.S.) in Computer Science

Jan 2010 – May 2012

- Thesis: Extracting Breast Cancer Feature and Generating Its Parametric Pattern in Medical Images

Korea University, Seoul, Republic of Korea

Bachelor of Science (B.S.) in Physics

Mar 1997 – Jul 2004

PROFESSIONAL EXPERIENCE

Associate Professor, California State University Long Beach

2024 – Current

Department of Computer Engineering and Computer Science

Assistant Professor, California State University Long Beach

2018 – 2024

Department of Computer Engineering and Computer Science

Lecturer, California State University Long Beach

2017 – 2018

Department of Computer Engineering and Computer Science

Data Scientist, Dongbu HiTek, Semiconductor Foundry

2005 – 2009

Manufacturing Data Analysis Team

RESEARCH GRANTS

Research Foundation, California State University Long Beach, co-PI, \$15,000

2023 – 2024

Creating education advertising using generative models. PI: Aiden Lee

Academic Advisory Council for Signage Research and Education, co-PI, \$4,000

2023 – 2024

Creating on-premise signage using generative models. PI: Aiden Lee

Research Foundation, California State University Long Beach, PI, \$14,700

2021 – 2022

Data driven regression modeling in social sciences, using deep neural networks.

Ministry of Science and ICT, Republic of Korea, PI, \$99,403

2020 – 2021

Deep Learning-based Healthcare System for Disease Early Detection.

No. 2020-0-01463

State of California, USA, co-PI, \$66,984

2020 – 2021

Trip Scheduling and the Cost of Congestion - Estimates Using Travel Diary Data and Big Data.

No. 22-1100-6115-CSULB-2031, PI: Jinwon Kim

PUBLICATIONS

JOURNALS

- Moon J., Tae M., Rhim S., & Choi S.I. (2024). Uncertainty-aware ensemble model for stride length estimation in gait analysis. *Expert Systems with Applications*, 255(B), 124655
- Heo J., Hwang S., Moon J., You J., Kim H., Cha J., & Kim K. (2024). A framework of transportation mode detection for people with mobility disability. *Journal of Intelligent Transportation Systems*, 1 – 16
- Hwang S., Heo J., Cho Y., Moon J., Lee Y., Kim H., Cha J., & Kim K. (2024). Transportation Mode Detection Technology to Predict Wheelchair Users' Life Satisfaction in Seoul, South Korea. *ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 8(1), 1 – 20
- Kim J. & Moon J. (2024). Congestion and scheduling preferences of car commuters in California: estimates using big data. *Journal of Economic Geography*, 24(1), 145-170
- Hwang S., Heo J., Moon J., You J., Kim H., Cha J., & Kim K. (2023). User and Period Independent Transportation Mode Detection for Wheelchair Users. *IEEE Access* 11, 10801 – 10812
- Cheon H., Kim T., Kim B.K., Moon J., & Kim H. (2022). Online Waypoint Path Refinement for Mobile Robots Using Spatial Definition and Classification Based on Collision Probability. *IEEE Transactions on Industrial Electronics* 70(7), 7004 – 7013
- Moon J., Jung J., Kang E., & Choi S.I. (2022). Open Set User Identification Using Gait Pattern Analysis Based on Ensemble Deep Neural Network. *IEEE Sensors Journal* 22(17)
- Moon J., Hong J.G., & Park T.W. (2022). A Novel Method for Traffic Estimation and Air Quality Assessment in California. *Sustainability* 14(15), 9169
- Le N., Moon J., Lowe C.G., Kim H.-I., & Choi S.I. (2022). An Automated Framework Based on Deep Learning for Shark Recognition. *Journal of Marine Science and Engineering* 10(7), 942
- Moon J., Shin Y.M., Park J.D., Minaya N.H., Shin W.Y., & Choi S.I. (2022). Explainable gait recognition with prototyping encoder–decoder. *PLoS ONE* 17(3): e0264783
- Byun, S., Shin, I.K., Moon, J., Kang, J., & Choi, S.I. (2021). Road Traffic Monitoring from UAV Images Using Deep Learning Networks. *Remote Sensing* 13(20), 4027
- Moon, J., Le. N., Minaya. N.H., & Choi. S.I. (2020). Multimodal Few-Shot Learning for Gait Recognition *Applied Sciences* 10(21), 7619
- Moon, J., Minaya, N.H., Le, N., Park, H.C., & Choi, S.I. (2020). Can Ensemble Deep Learning Identify People by Their Gait Using Data Collected from Multi-Modal Sensors in Their Insole? *Sensors* 20(14), 4001
- Choi, S.I., Moon, J., Park, H., & Choi, S.T. (2019). User Identification from Gait Analysis Using Multi-Modal Sensors in Smart Insole. *Sensors* 19(17), 3785
- Moon, J. & Eulenstein, O. (2017). Synthesizing Large-scale Species Trees using the Strict Consensus Approach. *Journal of Bioinformatics and Computational Biology* 15(03), 1740002
- Moon, J., Lin, H.T., & Eulenstein, O. (2016). Consensus Properties and their Large-Scale Applications for the Gene Duplication Problem. *Journal of Bioinformatics and Computational Biology* 14(03), 1642005

CONFERENCES (FULL PAPER)

Coleman, T. & Moon, J. (2019, September). A biometric for shark dorsal fins based on boundary descriptor matching. *Paper presented at the 32nd International Conference on Computer Applications in Industry and Engineering*, (pp. 63–71)

Moon, J. & Eulenstein, O. (2019, June). The Cluster Affinity Distance for Phylogenies. *Paper presented at the 15th International Symposium on Bioinformatics Research and Applications*, (pp. 52–64)

Moon, J. & Eulenstein, O. (2018, June). Cluster Matching Distance for Rooted Phylogenetic Trees. *Paper presented at the 14th International Symposium on Bioinformatics Research and Applications*, (pp. 321–332)

Moon, J. & Eulenstein, O. (2017, August). Synthesizing Species Trees from Unrooted Gene Trees: A Parameterized Approach. *Paper presented at the 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, (pp. 253–252)

Moon, J. & Eulenstein, O. (2016, October). Robinson-Foulds Median Trees: A Clique-based Heuristic. *Paper presented at the 7th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, (pp. 374–383)

Moon, J., Friedberg, I., & Eulenstein, O. (2016, August). Highly Bi-Connected Subgraphs for Computational Protein Function Annotation. *Paper presented at the 22nd International Computing and Combinatorics Conference*, (pp. 573–584)

Moon, J. & Eulenstein, O. (2016, April). Synthesizing Large-Scale Species Trees using Guidance Trees. *Paper presented at the 8th International Conference on Bioinformatics and Computational Biology*, (pp. 103–108)

Lin, H. T., Moon, J. & Eulenstein, O. (2015, March). Consensus Properties of the Gene Duplication Problem for Enhanced Phylogenetic Inference. *Paper presented at the 7th International Conference on Bioinformatics and Computational Biology*, (pp. 131–136)

CONFERENCES (POSTER / ABSTRACT)

Shu, G.Y. & Moon, J. (2020, October). Aortic Endograft Modeling Using Computed Tomography and Machine Learning. *Poster presented at the 2020 Bio Medical Engineering Society virtual annual meeting*

AWARDS & HONORS

Best Paper Award	Oct 2019
32nd International Conference on Computer Applications in Industry and Engineering	
Title: A biometric for shark dorsal fins based on boundary descriptor matching	
NSF Travel Award	Oct 2016
8th International Conference on Bioinformatics and Computational Biology	
For US-based students and young researchers	
Best Paper Award Finalist	Apr 2016
7th International Conference on Bioinformatics and Computational Biology	
Title: Synthesizing Large-Scale Species Trees using Guidance Trees	
Teaching Excellence Award	Dec 2015
Iowa State University	
Honors the top 10% of graduate students for outstanding teaching	
Pragmatics Fellow Scholarship	Aug 2012
Iowa State University	
For new graduate students who have high potential	
Choi Byungsun Scholarship	Mar 2003
Korea University	
Honors the top 10% of undergraduate students for outstanding GPA	
Freshman Special Scholarship	Mar 1997
Korea University	
Honors the top 10% of undergraduate students for outstanding entrance score	

**TEACHING
EXPERIENCE**

California State University, Long Beach

2017 – Current

- CECS551: Advanced Artificial Intelligence
- CECS524: Advanced Topics in Programming Languages
- CECS451: Artificial Intelligence
- CECS424: Organization of Programming Languages
- CECS341: Computer Architecture and Organization
- CECS327: Introduction to Networks and Distributed Computing
- CECS228: Discrete Structures with Computer Science Applications
- BME201: Programming for Biomedical Engineering