

RESEARCH INTERESTS

Spatial omics data analysis

EDUCATION

- Ph.D. Candidate in Computer Science – Boston University, USA Current
Supervisors: Prof. Ruben Dries and Prof. Mark Crovella
- Elite-M.Sc. in Theoretical and Mathematical Physics – Ludwig-Maximilians-Universität München, Germany Dec. 2016
Dissertation: *On Mathematical Representation of Linguistic Structure*
Supervisor: Prof. Konstantinos Panagiotou
- BA Hon. in Physics – University of Oxford, UK Jun. 2013
Dissertation: *The Sunyaev-Zel'dovich Effect*

PUBLICATIONS (Note: By default, the author order is based on contribution. Co-first authorships are marked with *.)

- Park, J.*, Choi, W.*, Tiesmeyer, S., Long, B., Borm, L.E., Garren, E., Nguyen, T.N., Tasic, B., Codeluppi, S., Graf, T. and Schlesner, M., 2021. Cell segmentation-free inference of cell types from in situ transcriptomics data. *Nature communications*, 12(1), pp.1-13.
- Park, J., Choi, W., Song, T. and Jhe, W., 2018. Curie's Symmetry Principle for Selection Rule of Photonic Crystal Defect Modes. *Plasmonics*, 13(2), pp.393-402.

WORK EXPERIENCES

- Researcher, TMAX Data R&D Center, Korea (for Korean National Service). 2018 – 2022
 - *Team leader*, Deep learning based Natural Language Processing and Knowledge Discovery
 - Operated a series of researches as a main participating researcher on knowledge representation and semantic inference techniques for developing an intelligent scholarly information service platform (Korean government funded).
 - Choi, W., Choi, J., Lee, S., Lim, J., Noh, H., and Lim, U., 2022. Method for utilizing deep learning based semantic role analysis. Patent KR 10-2379660, file November 30, 2020, and issued March 23, 2022.
 - Other major projects include i) design of a large-scale neural language model based on the mutual information maximization and syntactic hierarchy; ii) design of a learnable model for operational risk assessment and reliability analysis from news data for banking industry; and iii) developing deep-learning based Bayesian knowledge tracing model for personalized web-based mathematics education.

TEACHING EXPERIENCES

- Teaching Fellow, Probability in Computing (Undergraduate level) Spring 2022, Spring 2023
- Teaching Fellow, Introduction to Algorithms (Undergraduate level) Fall 2022
- Teaching Fellow, Combinatorial Structures (Undergraduate level) Summer I, Spring 2018, Fall 2017
- Teaching Fellow, RISE Practicum program in Computational Neurobiology (Boston University Summer Term Highschool Program) Summer 2018