

# Seonggyun Kim

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## Summary

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Computational biologist with multidisciplinary expertise in immunology, genomics, and machine learning. Experienced in developing analysis pipelines, integrating multi-omic data, and translating complex data into actionable insights. Proven track record of collaborative research and first-author publications.

## Experience

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### Postdoctoral Training Fellow

2023 – Present

The Francis Crick Institute, London, UK

- Developed computational pipelines for TCR/BCR sequencing data and built modular workflows in Nextflow
- Integrated single-cell data with spatial transcriptomics and proteomic data using Python and R
- Presented findings at lab meetings and international conferences
- Mentored junior researchers and contributed to grant proposals

### Junior Research Fellow

2022 – 2023

Institute for Basic Science, Daejeon, South Korea

- Built an R package for genomic analysis of mobile elements, now published as open-source
- Developed deep learning models for retrotransposon identification using Python

### Research Assistant

2016 – 2018

National Cancer Center, Goyang, South Korea

- Performed next-generation sequencing on clinical samples and conducted multi-omic analyses
- Published research on cervical/endometrial cancer linking HPV to host genomics

## Education

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### PhD in Biological Sciences

2018 – 2022

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea

- Thesis: Computational Methods for Genome Analysis
- Developed deep learning models for classifying retrotransposons
- Published 4 first-author papers during graduate studies

### BSc in Electrical Engineering

2012 – 2016

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea

- Minor in Biological Sciences; Magna cum laude

## Skills

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**Programming Languages:** Python, R, Bash, SQL, Nextflow

**Frameworks & Libraries:** PyTorch, TensorFlow, Scanpy, Seurat, Bioconductor, tidyverse

**Data Science:** Machine learning, deep learning, statistical analysis, bioinformatics

**Tools:** Git, Docker, Singularity, Slurm, AWS, Linux

**Languages:** Korean (native), English (fluent)

## Selected Publications

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1. **Kim S**, et al. (2023). “L1EM: A tool for accurate locus-specific LINE-1 RNA quantification.” *Bioinformatics*.

2. **Kim S**, et al. (2022). “DeepTE: a computational method for de novo classification of transposons.” *Bioinformatics*.
3. **Kim S**, et al. (2021). “Retrotransposon-driven transcription and cancer.” *Mobile DNA*.
4. **Kim S**, et al. (2018). “HPV integration and host genomic instability in cervical cancer.” *Nature Communications*.

## Awards

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- Best Poster Award, ISMB 2022
- KAIST Graduate Fellowship, 2018–2022
- Dean’s List, KAIST, 2014–2016