

# Minji Kang

Ph.D. Student in Computer Science,  
Stanford University, CA, USA  
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## Interests

### Computational Biology

- Decoding molecular biology data to discover complex biological mechanisms underlying human diseases

## Education

### Ph.D. Student in Computer Science

**Stanford University (Advisor: Dr. Aaron Newman)**

📅 Sep. 2020 - Present

📍 CA, USA

### B.S in Computer Science and Engineering

**Seoul National University**

📅 Mar. 2015 - Feb. 2019

📍 Seoul, Korea

- Summa Cum Laude (Rank: 1/72)

## Honors and Awards

**Bio-X Stanford Interdisciplinary Graduate Fellowship (Bio-X SIGF)** Stanford Bio-X, 2022-2025

**Doctoral Study Abroad Scholarship** Korea Foundation for Advanced Studies (KFAS), 2020-2025

**Bio-X Travel Award** Stanford Bio-X, 2022

**Best Undergraduate Thesis Award** Dept. of Computer Science and Engineering, Seoul National University, 2019

**Presentation Award** Korean Institute of Information Scientists and Engineers, 2018

**The National Scholarship for Science and Engineering** Korea Student Aid Foundation, 2017-2018

**Eminence Scholarship** Seoul National University, 2016

**Hanseong Nobel Scholarship** Hanseong Sonjaehan Scholarships Foundation, 2014

## Publications

Milad R. Vahid\*, Erin L. Brown\*, Chloé B. Steen\*, Wubing Zhang, Hyun Soo Jeon, Minji Kang, Andrew J. Gentles, Aaron M. Newman. High-resolution alignment of single-cell and spatial transcriptomes with CytoSPACE. *Nature Biotechnology*, 2023

\*: equal contribution

Taeheon Lee, Sangseon Lee, Minji Kang, and Sun Kim. Deep hierarchical embedding for simultaneous modeling of GPCR proteins in a unified metric space. *Scientific Reports*, 2021

Minji Kang\*, Sangseon Lee\*, Dohoon Lee, and Sun Kim. Learning Cell-Type-Specific Gene Regulation Mechanism by Multi-Attention Based Deep Learning Model with Regulatory Latent Space. *Frontiers in Genetics*, 2020

\*: equal contribution

Minji Kang, Jonghoon Won, Jisung Park, and Jihong Kim. A CNN-Based Encrypted Data Detection Technique for Ransomware Defense. In *KIISE Transactions on Computing Practices*, 2019





**Invited Paper**

## Conference

Minji Kang\*, Zhenqin Wu\*, Gunsagar S. Gulati, José J. A. Armenteros, James Zou, and Aaron M. Newman. Inferring absolute developmental potential in single cells. In *14th Annual RECOMB/ISCB Conference on Regulatory & Systems Genomics with DREAM Challenges*, 2022 (Oral presentation)

\*: equal contribution

Jisung Park, Youngdon Jung, Jonghoon Won, Minji Kang, Sungjin Lee, and Jihong Kim. RansomBlocker: a Low-Overhead Ransomware-Proof SSD. In *Proceeding of the 56th Design Automation Conference (DAC)*, 2019

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|---------------------|---|
| Conference          | <p>Jonghoon Won*, <u>Minji Kang*</u>, Jisung Park, and Jihong Kim. File-Fragment Type Identification using Selected N-grams by Apriori Algorithm. In <i>Proceeding of the 2018 Korea Software Congress, 2018</i><br/>*: equal contribution</p> <p><u>Minji Kang*</u>, Jonghoon Won*, Jisung Park, and Jihong Kim. A Deep Learning-Based Encrypted Data Detection Technique for Ransomware Defense. In <i>Proceeding of the 2018 Korea Computer Congress, 2018</i><br/>*: equal contribution<br/><b>Presentation Award</b></p>   |
| Talks               | <p><b>Inferring absolute developmental potential in single cells</b><br/><b>13th Annual Institute for Stem Cell Biology and Regenerative Medicine Retreat, Stanford University</b><br/>📅 Nov. 2021 <span style="float: right;">📍 CA, USA</span></p>   |
| Research Experience | <p><b>Researcher</b><br/><b>Bio &amp; Health Informatics Lab, Seoul National University (Advisor: Dr. Sun Kim)</b><br/>📅 Jan. 2019 - Aug. 2020 <span style="float: right;">📍 Seoul, Korea</span></p> <p><b>Research Intern</b><br/><b>Computer Architecture &amp; Embedded Systems Lab, Seoul National University (Advisor: Dr. Jihong Kim)</b><br/>📅 Jul. 2017 - Dec. 2018 <span style="float: right;">📍 Seoul, Korea</span></p>   |
| Teaching            | <p><b>Mentor</b><br/><b>Winter Coding Camp, Codewings</b><br/>📅 Jan. 2018 <span style="float: right;">📍 Seoul, Korea</span></p> <ul style="list-style-type: none"> <li>• Taught Python to elementary school students for 2-day camp</li> <li>• Helped students develop AI car game player with their own creative strategy</li> </ul> <p><b>Developer of Lab Assignments</b><br/><b>Computer Architecture, Seoul National University</b><br/>📅 Jul. 2017 - Aug. 2017 <span style="float: right;">📍 Seoul, Korea</span></p> <ul style="list-style-type: none"> <li>• Updated course material from Y86 to Y86-64</li> <li>• Developed lab assignments to implement Y86-64 processor in Bluespec System Verilog (BSV)</li> </ul> |
| Skills              | <p> <b>Software languages</b><br/>Python, R, C/C++, JAVA, OCaml, LaTeX, Assembly Language</p> <p> <b>Hardware languages</b><br/>Verilog, Bluespec System Verilog (BSV)</p> <p> <b>Machine Learning</b><br/>PyTorch, Tensorflow</p> <p> <b>Web Development</b><br/>HTML, CSS, React, Django, Angular</p>   |