1ST SINGLE-CELL & SPATIAL OMICS HACKATHON

19th - 22nd, August 2024

Organizers **Junil Kim** (Soongsil University)
Jeongbin Park (Pusan National University)
Heetak Lee (Institute for Basic Science)

Venue **Oceans and Fisheries HRD Institute**
Gijang, Korea

Supported by

10X GENOMICS

geninus
Living better with your DNA

DAON
BIOSCIENCES

NRF

SOONGSIL UNIVERSITY 1897

PUSAN NATIONAL UNIVERSITY SINCE 1946
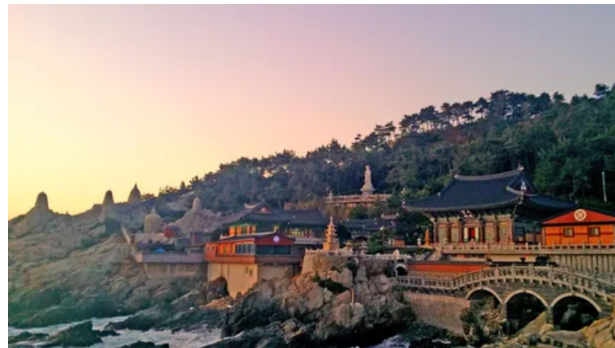
Single Cell & Spatial Omics Korea

SCSOK Hackathon: A to Z

Jeongbin Park

PUSAN NATIONAL UNIVERSITY

Welcome to Gijang!

Yonggung-sa Temple

Lotte World Busan
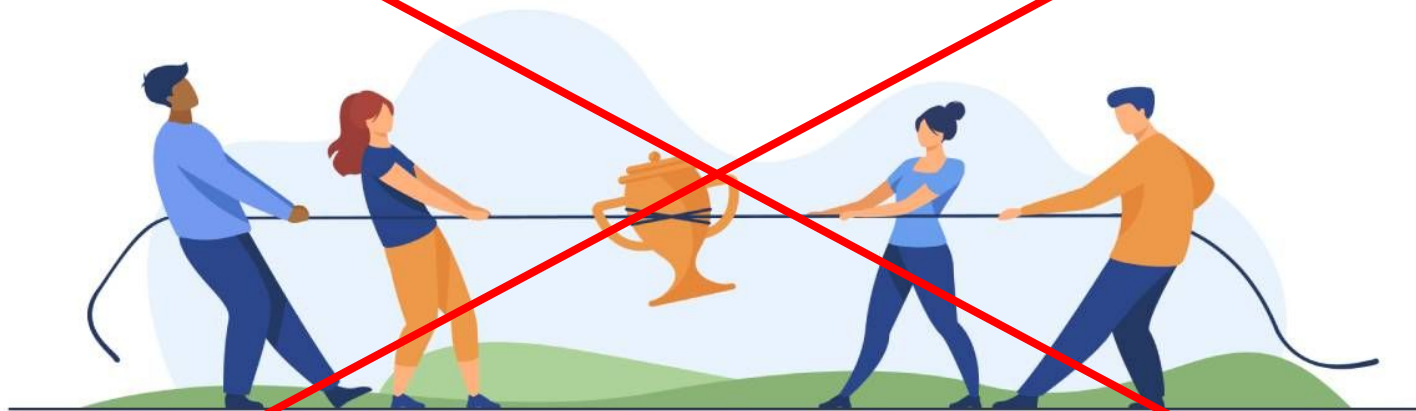
Welcome to Gijang!

1. Osiria Subway Station
2. Lotte World Busan
3. Dinner Place (Beef)
4. Where we are

Hackathon does not necessarily to be a competition!

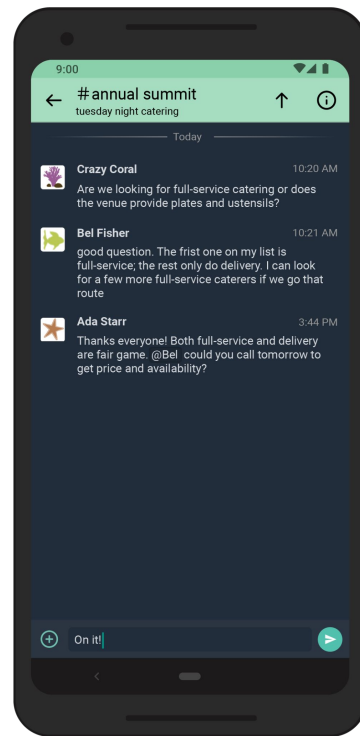**Hackathon is rather a collaborative event,**

But just with computers.

Zulip

- As always, we use Zulip for communications

  - Zulip is available on your Phone!

    - Supported on Android and iOS

    - Install Zulip app, and use below URL to get started

      - https://zulip.scsok.io

  - All announcements at "hackathon" channel

Spatial Transcriptomics

> Cell segmentation of high resolution ST data (e.g., Visium HD)

> Neighbor-specific alteration of gene expression

> Tissue territory/domain analysis

> Integration

Single-cell Transcriptomics

> Application of AI, e.g., GPTs

> Lineage tracing

> Sane method for HVG selection

> Genotype to phenotype inference

https://hackathon.scsok.io

- Nextcloud

  - https://nc.pnucolab.com

  - Sign up, wait for the approval

  - All of the data can be found in "SCSOK Shares"

    - All results should be uploaded to "results" directory

What machines are available?

- Linux servers

  - You need to set up VPN to connect servers

  - Download OpenVPN setup file in 'server_information' directory

    - Windows: "openvpn-connect-3.5.0.3818_signed.msi"

    - MacOS: "openvpn-connect-3.5.0.5200_signed.dmg"

  - Run the installer to set it up

- OTP Setup

  - Next, you need to install an OTP application on your phone

  - 'FreeOTP' is recommended

    - But any other OTP apps that support standard TOTP protocol would work

  - Open 'qr.png' and scan it to add OTP to the app

- Finish setting VPN

  - Download 'bce_gate2.ovpn' file and run it

  - Use credential information in 'vpn_credentials.txt' to log in

    - You will need to input OTP pin

What machines are available?

- SSH to server

  - Download 'id_rsa.guest1' file

  - Open up a terminal, go to the directory with 'id_rsa.guest1'

  - Type below to connect to the remote server

```
$ ssh -i id_rsa.guest1 -p 2202 guest1@10.125.208.187
                        or
$ ssh -i id_rsa.guest1 -p 2202 guest1@10.125.208.188
                        or
$ ssh -i id_rsa.guest1 -p 2202 guest1@10.125.208.49
```