In Tak Hwang

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Research interests

Mathematical Cryptography, Quantum Computing

Education

Sangsan High School 2015 — 2017

DGIST 2018 — Present
B.S. in School of Undergraduate Studies GPA: 3.99/4.3

UC Berkeley 2018 Summer
Summer Sessions, in part of DGIST Freshmen Global Leadership Program (FGLP)

Honors and scholarships

DGIST Dean's List 2020

CTF Security Competitions 2020 — Present

DEF CON CTF 2020	*Finalist*
TokyoWesterns CTF 2020 Finals	*3rd place*
Midnight Sun CTF 2020 Finals	*7th place*
Real World CTF 2020/2021 (Media Coverage)	*1st place*
PlaidCTF 2021	*5th place*
DEF CON CTF 2021	*Finalist*

Research experience

NIMS Academy for Industrial Mathematics 2019.08
I studied text-based modeling and big data mining, along with its use in industrial mathematics.

DGIST Computer Architecture and Systems Lab (CASLAB)
Mentors: Prof. Dae Hoon Kim (DGIST) 2019 Summer
During Intership, I studied various CPU Side Channel Attacks, such as Flush+Reload and Row Hammering.

DGIST Division of Intelligent Robotics
Mentors: Dr. Sang Chul Lee (DGIST) 2020 Summer
During Internship, I studied algorithms for solving localization problems, i.e. determining the local position of autonomous robots.

DGIST Undergraduate Group Research Program (UGRP)
Mentors: Prof. Hyo Sang Kang (DGIST) 2020
I participated in two research teams as a part of UGRP. The topics were Game Development and Designing Surface Code with Uniform Hyperbolic Tiling.

For the former, I developed several games using Unity and (mainly) Godot Engine. For the latter, I studied Quantum Error Correction, Hyperbolic Geometry and developed Uniform Hyperbolic Tiling Generator using Python.

Teaching experience

Tutor at DGIST

SE102 Multivariate Calculus 2019 Fall
SE201 Linear Algebra 2020 Spring

Teaching assistant at KAIST PRE-URP

Making a quantum error correction game 2021 Spring
Drawing Escherian Image Using Hyperbolic Tiling 2021 Summer

Skills

Programming

Proficient in: Python, LaTeX, Godot Engine
Currently Learning: Rust, Golang

Languages

Korean (native), English (fluent)

Other activities

Translator of elementaryOS 2018 — Present
Translating several parts, including the website of elementaryOS.

Member of CTF team CodeRed 2020 — Present
Solving crypto challenges in CTF competitions.

Developer/Writer of an untitled puzzle game 2020 — Present
Our puzzle game is under development, and is expected to start beta testing in mid 2021.

Other interests

My non academic interests include photography, screenwriting, and watching films.