



# KEA KIMLEANG

Master Graduate - Computer Science & AI Convergence

## CONTACT

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## SKILLS

Web Development	5+ yrs
Mobile Development	2+ yrs
Software Teaching	2+ yrs
Internet of Things	1+ yrs
Machine Learning	2+ yrs
Quantum Computing	2+ yrs
Quantum ML	1+ yrs

## EDUCATION

### M.S. - Artificial Intelligence Convergence

Pukyong National University - Busan, South Korea

2022 - 2024

Passed with **4.215 of 4.5 GPA**. Working 2.5 Years on Quantum Algorithm and Quantum Machine Learning with a thesis "Leveraging QAOA to Optimize the Knapsack-Problem-based Electric Vehicle Charging Solution."

### B.S. - Computer Science & Engineering

Royal University of Phnom Penh - Cambodia

2016 - 2020

Passed with **3.8 of 4 GPA**. Fully Passed Final Exam.

### A Year Training - Software Development

Korea Software HRD - Phnom Penh, Cambodia

2019 - 2020

Passed with **A Grade**. Major projects were Financial Report Web Application and Forum iOS Application.

## WORK EXPERIENCE

### Research Assistant

Pukyong National University, Busan, South Korea

2022 - 2024

Researching on Machine Learning applied to time series data and EPS system, Embedded System, Quantum Algorithm, and Quantum Machine Learning. Actively engaged in algorithm and application development, complemented by extensive academic writing resulting in a plethora of research papers.

### IT Instructor

Korea Software HRD Center, Phnom Penh

2020 - 2022

Teaching web development with ReactJS and Angular technology, iOS mobile development, DevOps, as well as Spring Boot framework for backend development. Seamlessly managing HRD registration websites, servers, and domain setups for website online presence.

### Java Developer

IT Solution Company, Phnom Penh

2018 - 2019

Developing desktop application using Java GUI for user interaction. Making connection of the application with Salesforce CRM integration.

## PROJECTS

### Quantum Machine Learning Software Stack

Tool: Web Development, Quantum Computing

2023 - 2024

A full stack development approach for web applications is employed to create and experiment with various QML applications. This application provides a unique approach for crafting QML tailored to specific models within financial, logistics, and optimization algorithms.

# ACHIEVEMENTS

## Korea Software HRD Center

### Web and Mobile Development

Ranked among the top students in the courses.

## DevOps Engineering

### DevOps for both Backend and Frontend Environments

Several certifications conferred by Udemy, validating fundamental proficiency in DevOps engineering.

## Conference and Presentation

### Delivering both Face-to-Face and Online Presentations

Have done delivering engaging presentations to diverse audiences, both small and large audiences as well as online presentations.

## Micro-display Controller Design

### Tool: Embedded System, FPGA, Machine Learning

2022 - 2023

A virtual reality hardware design leveraging embedded hardware with FPGA technology to optimize the adaptive foveated rendering algorithm. This approach optimizes hardware resources by allocating high computational power specifically only to users' eye gaze location, thereby it is reducing overall resource consumption significantly.

## Distributed Power Controller Management

### Tool: Web Development

2022

An advanced web application showcasing installed sensors throughout South Korea. Offering control, detection, management, and visualization of both healthy and abnormal sensor data with seamless web interface.

## Distributed Power Controller Management

### Tool: Web and iOS Development

2019 - 2020

A Financial Report web app with beautiful yet informative graphs and an iOS Forum application for users to seamlessly engage in discussions.

# PUBLICATIONS

## Empirical Analysis of Quantum Approximate Optimization Algorithm for Knapsack-based Financial Portfolio Optimization Quantum Machine Intelligence, 2024

Under Review

Authors: Huot Chansreynich, **Kea, Kimleang**, Tae-Kyung Kim, Youngsun Han

Status: Under Review

## Enhancing a Classical Convolutional Autoencoder with a QAOA for Image Noise Reduction ScienceDirect Neurocomputing, 2024

Under Review

Authors: **Kea, Kimleang**, Won-du Chang, Hee Chul Park, Youngsun Han

Status: Under Review

## Multiple Sensor-based Adaptive Foveated Display Control for Enhanced Computational Efficiency of Virtual Reality Devices IEEE Sensor Journal, 2024

Under Review

Authors: **Kea, Kimleang**, Youngsun Han, and Tae-Kyung Kim

Status: Under Review

## A Federated Learning Approach Efficient Anomaly Detection in Electric Power Steering Systems IEEE Access, 2024

Under Review

Authors: **Kea, Kimleang**, Youngsun Han, and Young-Jae Min

Status: Under Review

## Leveraging Knapsack QAOA Approach for Optimal Electric Vehicle Charging IEEE Access, 2023

SCIE - IF 3.9

Authors: **Kea, Kimleang**, Chansreynich Huot, and Youngsun Han

Status: Accepted and Published

**Enhancing Anomaly Detection in Distributed Power Systems AutoEncoder-based Federated Learning**  
**PloS One, 2023**

**SCIE - IF 3.7**

Authors: **Kea, Kimleang**, Youngsun Han, and Tae-Kyung Kim  
Status: Accepted and Published

**A Deep Learning Approach to Detect Anomalies in an Electric Power Steering System**  
**MDPI Sensors, 2022**

**SCIE - IF 3.847**

Authors: Alabe, Lawal Wale, **Kea, Kimleang**, Youngsun Han, Young Jae Min, and Taekyung Kim  
Status: Accepted and Published

## **WORKSHOPS & CONFERENCES**

**International Technical Conference on Circuits and Systems, Computers, and Communications**  
**Okinawa Institute of Science and Technology Graduate University, Okinawa, Japan**

**Jul 2024**

A Presented Paper: Stock Price Prediction using Quantum LSTM

**International Conference on Green and Human Information Technology**  
**Le Quy Don Technical University, Hanoi, Vietnam**

**Jan 2024**

**International Conference on Quantum Techniques in Machine Learning**  
**CERN, Geneva, Switzerland**

**Nov 2023**

**International Conference on Consumer Electronics Asia 2023**  
**Paradise Hotel Busan, Busan, South Korea**

**Oct 2023**

A Presented Paper: Accelerating YOLO-based Real-time Object Detection via Foveated Rendering

**International Conference on Systems, Programming, Languages, and Applications: Software for Humanity, OOPSLA Track**  
**University of Auckland, Auckland, New Zealand**

**Dec 2022**

**International Conference**  
**Jeju Hotel, Jeju Island, South Korea**

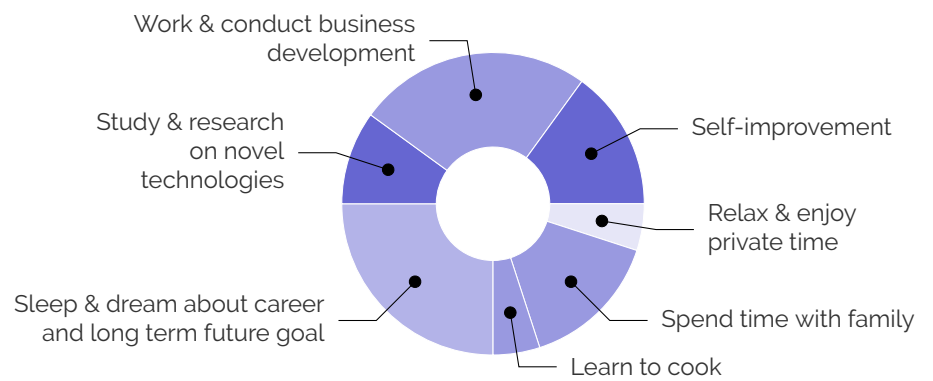
**Jun 2022**

A Presented Paper: Design and Implementation of EPS Defect Monitoring System

## **LANGUAGES**

- **Cambodian:** Native language.
- **English:** Proficient in Speaking, Listening, Reading, and Writing.
- **Korean:** Impoverished in Speaking, Listening, Reading, and Writing.

## A DAY OF MY LIFE



## REFERENCE

- Put all the points that are not covered in **above sections**.