



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

Achieved a Master Degree with 4.215 of 4.5 GPA. Working 2.5 Years on machine learning, quantum algorithms, and quantum machine learning with a thesis "A Study of Quantum Approximate Optimization Algorithm for Knapsack Problem in Electric Vehicle Charging Scenarios."

B.S. - Computer Science & Engineering

Royal University of Phnom Penh - Cambodia

2016 - 2020

Achieved a GPA of 3.8 out of 4. Strong understanding of computer science fundamentals including algorithms, data structures, and software engineering. Proficient in programming languages such as Java, Javascript, Python, and database technology.

A Year Training - Software Development

Korea Software HRD - Phnom Penh, Cambodia

2019 - 2020

Completed with A Grade. Comprehensive of web development and iOS application technology. Developed analytical and problem-solving skills through coursework and projects.

WORK EXPERIENCE

Research Assistant

Pukyong National University, Busan, South Korea

2022 - 2024

Researching on machine learning applied to time series data and electric power steering systems, embedded system, quantum algorithms, and quantum machine learning. Additionally, development of a fully web application tailored for intuitive utilization in quantum machine learning development. Actively engaged in machine learning algorithms and applications development, complemented by extensive research academic writing resulting in a several of research papers.

IT Instructor

Korea Software HRD Center, Phnom Penh

2020 - 2022

Teaching courses of web application development with ReactJS and Angular technology, iOS mobile development, DevOps, and Spring Boot framework for backend development, providing students insights into modern fullstack development practice. Moreover, also seamlessly managing HRD registration websites, infrastructure servers, and domain name 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.

ACHIEVEMENTS

Korea Software HRD Center

Web and Mobile Development

Ranked among the top students throughout the courses.

DevOps Engineering

DevOps for both Backend and Frontend Environments

Several certifications offered by Udemy platform, facilitating fundamental proficiency using DevOps technology.

Conference and Presentation

Delivering both Face-to-Face and Online Presentations

Delivering the engaging oral presentations to the audiences, both small and large audiences as well as online presentations.

PROJECTS

ChatAllamo

2024

Tool: Mobile Development, Flutter

Develop an open source AI-powered mobile app client, thanked and powered by Ollama AI, using Flutter technology. This mobile app enables users to engage in conversations with provided or privately hosted Ollama AI models. Its key features include: Chatting with AI models, Streaming typing-like animation and the ability to abort chat messages, Saving and loading chat histories, Customizable system prompts, Custom private server configuration, Support for image integration and model selection, etc. <https://github.com/KimleangSama/chat-allamo>

Quantum Machine Learning Software Stack

2023 - 2024

Tool: Web Development, Quantum Computing

A comprehensive full-stack development methodology is utilized to design and explore diverse quantum machine learning applications. This software offers a distinctive strategy for refining quantum machine learning tailored to building models within financial, logistics, and optimization algorithms. Additionally, a programmable web interface is available, offering support for integrating IBM Qiskit quantum software code into a quantum assembly language, facilitating execution across multiple quantum simulators. This tool leverages software frameworks such as Qiskit, PennyLane, and Python for machine learning integration.

Micro-display Controller Design

2022 - 2023

Tool: Embedded System, FPGA, Machine Learning

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

2022

Tool: Web Development

An advanced web application showcasing installed sensors throughout South Korea. It is offering listing, controlling, detection, management, and visualization of both healthy and abnormal sensor data with a seamless web application interface.

HRD Course Projects

2019 - 2020

Tool: Web and iOS Development

A financial report web app with beautiful yet informative graphs and an iOS Forum application for users to seamlessly engage in discussions. Took role as a project coordinator for managing and assigning tasks to team members.

PUBLICATIONS

Enhancing the Classical Convolutional Autoencoder with the quantum technique, Quantum Approximate Optimization Algorithm, for Image Noise Reduction [arXiv, 2024](#)

Preprinted

Authors: **Kimleang Kea**, Professors: Won-du Chang, Hee Chul Park, and Youngsun Han
Status: Preprinted

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

SCIE - IF 3.9

Authors: **Kimleang Kea**, Professors: Youngsun Han, and Young-Jae Min
Status: Accepted and Published

Leveraging Knapsack QAOA Approach for Optimal Electric Vehicle Charging
[IEEE Access, 2023](#)

SCIE - IF 3.9

Authors: **Kimleang Kea**, Chansreynich Huot, and Prof: 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: **Kimleang Kea**, Professors: 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, **Kimleang Kea**, Professors: Youngsun Han, Young-Jae Min, and Taekyung Kim
Status: Accepted and Published

WORKSHOPS & CONFERENCES

International Conference on Green and Human Information Technology
[Le Quy Don Technical University, Hanoi, Vietnam](#)

Jan 2024

Paper: Leveraging Dynamic Zoom-in Technique for Enhanced Object Detection in Foveated Images

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

Paper: The Accelerating of 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

LANGUAGES

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