KEA KIMLEANG

Master Degree Graduated in AI Convergence

CONTACT

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SKILLS

Web Development 5+ yrs

Mobile Development 2+ yrs

Software Education 2+ yrs

DevOps 2+ yrs

Researcher 4+ yrs

Data Analytics 1+ yrs

Machine Learning 2+ yrs

Quantum Computing 2+ yrs

EDUCATION

M.S. - Artificial Intelligence Convergence **2022 - 2024**
Pukyong National University - Busan, South Korea

Achieved a Master Degree with 3.97 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 **2016 - 2020**
Royal University of Phnom Penh - Cambodia

Achieved a GPA of 3.8 GPA. Strong understanding of computer science fundamentals including programming, algorithms, and data structures.

A Year Training - Software Development **2019 - 2020**
Korea Software HRD - Phnom Penh, Cambodia

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

WORK EXPERIENCE

Research Assistant **2022 - 2024**
Pukyong National University, Busan, South Korea

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. Other roles are as follows:

- Lead and manage the lab projects, focusing on team coordination.
- Responsible for the annual final report to the project owner.
- Analyze the data to be utilized in quantum computing applications.
- Evaluate the algorithms to determine their proficiency.

IT Instructor **2020 - 2022**
Korea Software HRD Center, Phnom Penh

Teaching courses of webapp 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 infrastructure servers, and domain name setups for website online.

Java Developer **2018 - 2019**
IT Solution Company, Phnom Penh

Developing desktop application for user interaction with Salesforce CRM.

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
Tool: Mobile Development, Flutter

2024

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

- Develop and maintain of a full-stack mobile application, including server management, backend integration, and frontend user interface design.

- Handle the processing in the AI backend server using the capabilities of a large language model (LLM) to generate responses for the frontend.

Quantum Machine Learning Software FullStack
Tool: Web Development, Quantum Computing

2023 - 2024

A comprehensive full-stack development methodology is utilized to design and explore diverse quantum machine learning applications. This software is tailored to building models within financial, logistics, and optimization domains. 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. https://beta.qamelboost.com

- Coordinate the client requirements to the developer teams.

- Analyze machine learning data to seamlessly navigate the application workflow.

- Manage main source code, review revisions, and provide feedback to teams.

- Optimize technical backend and server infrastructure to ensure maximum service uptime.

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. 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
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. 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

Authors: **Kea Kimleang**, 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: **Kea Kimleang**, 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: **Kea Kimleang**, 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: **Kea Kimleang**, 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, **Kea Kimleang**, 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.

REFERENCE

Mr. Chen Phirum

- **Position**: Deputy Director of Korea Software HRD Center
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Professor. Kim Tae-Kyung

- **Position**: Department of Management Information Systems, Chungbuk National University, South Korea
- **Email**: kimtk@chungbuk.ac.kr