

# Mariam Kallel

GKS AWARDEE, COMPUTER SCIENCE STUDENT

SeoulTech University, Nowon, Seoul, 01811, Rep. of KOREA

☎ (+82) 10-7770-6751 | ✉ mariemkallel36@gmail.com | 📷 maryeol | 🌐 Mariem Kallel

## Education

### Seoul National University of Science and Technology

Seoul, S.Korea

MASTER'S IN APPLIED ARTIFICIAL INTELLIGENCE

Sep. 2023 - Aug. 2025

- CGPA: 95.9./100
- Keywords : Machine Learning & Deep Learning, Neurotechnology & EEG Signal Processing

### Daejeon University

Daejeon, S.Korea

KOREAN LANGUAGE STUDIES

Sep. 2022 - Aug. 2023

- TOPIK level 4
- Keywords : Cross-Cultural Communication, Self-Discipline & Time Management

### Higher Institute of Computer Science

Ariana, Tunisia

B.S. IN COMPUTER SCIENCE ENGINEERING

Sep. 2019 - Aug. 2022

- CGPA: 3.65/4.00
- Keywords : Data Structures & Algorithms, Object-Oriented Programming (OOP), Problem Solving, Team Collaboration & Agile Development

## Experience

### Media Informatics Group, Ludwig Maximilians Universität

München, Germany

RESEARCHER

2025

- Conducting research in context of Human Computer Interaction and Artificial Intelligence.
- Analysis of brain signal data and development of brain-computer interface.
- Creation of protocol design for EEG data collection.

### BrAln Lab

Seoul, Korea

RESEARCHER

2023 – 2025

- Conducting research to understand brain mechanisms and develop brain-inspired artificial intelligence.
- Working with EEG signal data to build AI systems based on brain activity.
- Creating and publishing a novel EEG dataset for the scientific community.

### Scheidt & Bachmann Maghreb

Tunis, Tunisia

SOFTWARE ENGINEERING INTERN

2022

- Developed a smart parking mobile app using Bluetooth Low Energy (BLE) and beacons.
- Built the Android app using Java and Android Studio.
- Programmed IoT modules in C and Python.
- Implemented server-side detection of vehicles to automate barrier control.

### Elios Academy

Tunis, Tunisia

WEB DEVELOPMENT INTERN

2021

- Developed an e-learning platform for students and instructors.
- Focused on front-end development using Angular.
- Ensured a responsive and smooth user experience across devices.

## Research papers

### ITC-CSCC 2025 - Federated Learning: Towards secure and efficient EEG classification

South Korea

FIRST AUTHOR

2024 - 2025

- EEG Motor Imagery classification with preserving human brain data privacy using federated learning instead of centralized learning.
- Using state-of-the-art deep learning models, EEG motor imagery classification reaches high accuracy almost similar to centralized learning approaches, which neglect the privacy of each user's data.

## **[Under Review] IEEE Transactions on Instrumentation and Measurement - Design and Evaluation of Dual-Channel EEG Feature Fusion of Auditory and Visual Stimuli for Wearable Biometric Modalities**

South Korea

FIRST AUTHOR

2024 - 2025

- Ear EEG studies are limited compared to conventional EEG. Ear EEG—a compact wearable device—has been proven in this study to capture meaningful neural signals, addressing the inconvenience of wearing conventional EEG headsets.
- The analysis of ear EEG signals shows the reliability of this approach.

## **[LINK will be available soon] CHI 2025 Conference - Exploring Ear EEG Role In Personalized Learning**

South Korea

FIRST AUTHOR

2024 - 2025

- Adaptive learning aims to tailor educational materials based on a learner's cognitive and emotional states.
- Ear EEG is explored to show its capability to capture individual features—mandatory as a first step in creating a personalized learning system.
- A deep learning approach was implemented for EEG signal classification.

## **[Under Review] Scientific Data Journal - MindEEG: Novel Dataset for EEG biometric task**

South Korea

FIRST AUTHOR

2024 - 2025

- Addressing the limited studies related to Ear EEG, this work presents the development of a novel, rich dataset customized for EEG-based biometric tasks.
- From protocol design to data collection and analysis, this dataset can be considered as benchmark for EEG biometrics studies.

## **ITC-CSCC 2024 conference - Multimodal Machine Learning Model For MCI Detection Using EEG, MRI and VR Data**

South Korea

FIRST AUTHOR

2024 - 2025

- Mild Cognitive Impairment is a stage between normal cognitive decline and dementia, and can sometimes be an early indicator of Alzheimer's disease.
- While the difficulty to detect via conventional medical analysis, AI systems and machine learning algorithms have proven effective in classifying MCI.
- This work supports multimodal analysis (VR, MRI and EEG data) and applies machine learning techniques to achieve high classification performance.

## **TICKET-LESS PARKING SOLUTION BASED ON BEACONS**

Tunisia

FIRST AUTHOR

Dec. 2021 - May. 2022

- Bachelor Dergee project report
- Indoor localization with Bluetooth Low Energy Beacons.
- Development of mobile app for Android users aiming a smart parking solution.

## **Extracurricular Activity**

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### **Best Incheon International Airport ambassador**

2024

INCHEON INTERNATIONAL AIRPORT

- Create content for ICN airport to upload on social media.

### **Salam Seoul Ambassador**

2024

SEOUL CITY TOURISM

- Promote Seoul as Muslim-friendly city to foreigners.

### **Best Salam Seoul Ambassador**

2023

SEOUL CITY TOURISM

- Make content about Seoul to introduce it to foreigners.

### **Best Korea Arab Society Member**

2023

KAS - MINISTRY OF FOREIGN AFFAIRS

- Bridging between Korea and various Arab countries through meetings and exhibitions.

### **PlusPlanner Member**

2023

KOREA TOURISM ORGANIZATION

- Content creation and promotion of Korea through social media.

### **Korea Travel Mate Member**

2023

KOREA TOURISM ORGANIZATION

- Content creation and promotion of Korea through social media.

## President

Tunisia

FREEWAYS CLUB (FREE SOFTWARE AMBASSADOR CLUB)

Sep. 2021 - Aug. 2022

- Monitored and ensured continuous progress of the club.
- Facilitated club activities and learned key leadership skills.
- Organized programming competitions and workshops.

## Skills and Certifications

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**Programming,** C, C++, Python, JAVA

**Languages,** Arabic, French, English, Korean