



SafeChamnun

PREDICT PROTECT PREVAIL

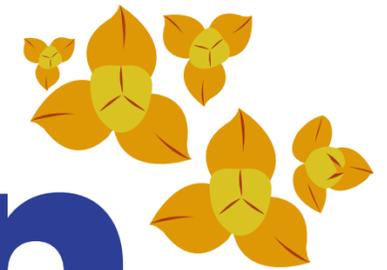
"Welcome to SafeChamnun! Together, we are building a safer future for the Mekong River Basin. By combining innovative technology with community resilience, we aim to protect lives and promote sustainability. Thank you for joining us on this vital mission—your support makes all the difference!"



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SafeChamnun





SafeChamnun

SafeChamnun is an IoT-based flash flood detection and warning system tailored for the Mekong River Basin. Using IoT-enabled sensors, Machine Learning, and AI, it monitors water levels, rainfall, and soil moisture in real time, providing early warnings to at-risk communities. In addition to its technology, **SafeChamnun** emphasizes community engagement and resilience, offering awareness campaigns, capacity-building, renewable energy integration, and sustainable partnerships to ensure long-term protection.

SafeChamnun is essential for the Mekong River Basin, a region vulnerable to flash floods. By enabling early detection and automated alerts, it allows communities to prepare and respond proactively, potentially saving lives and reducing infrastructure damage. Beyond the technical solution, **SafeChamnun** promotes local resilience and sustainability, building community awareness and forming partnerships that support ongoing flood management and preparedness.



MEKONG IMPACTS

- **Cambodia:** Flooding from the Mekong River has led to severe impacts on Cambodian communities, including loss of life, displacement, and damage to infrastructure and agriculture. For example, the floods in 2011 affected about 1.2 million people, causing significant displacement and damage to crops and homes.
- **Vietnam:** In the Mekong Delta, which is heavily reliant on agriculture, floods often lead to substantial economic losses. Flooding in 2018 caused damage to over 5,000 homes and destroyed thousands of hectares of rice fields.
- **Thailand:** In the northeastern region of Thailand, which is part of the Mekong Basin, floods have repeatedly caused displacement and loss of livelihoods. The 2019 floods affected more than 33,000 households, causing extensive damage to agriculture and infrastructure .
- **Laos:** The 2018 floods, exacerbated by the collapse of a dam in the Xe-Pian Xe-Namnoy hydropower project, led to widespread devastation, affecting thousands of people and causing numerous deaths. The flooding submerged entire villages and left many without homes and resources .



ABOUT US



SafeChamnun is a multidisciplinary team dedicated to addressing the urgent challenges of natural disaster management, focusing on flash floods in the Mekong River Basin. Our team of engineers, scientists, and community development specialists combines technical expertise, research, and practical strategies to create impactful solutions for local communities. Through innovative technologies, ongoing research, and close collaboration with local stakeholders, we aim to reduce the impact of flash floods, protect lives and livelihoods, and build a safer, more resilient future for all.



VISION & MISSION

SafeChamnun Vision: To create a safer and more resilient Mekong River Basin, empowering communities to mitigate the impact of flash floods and thrive in adversity.

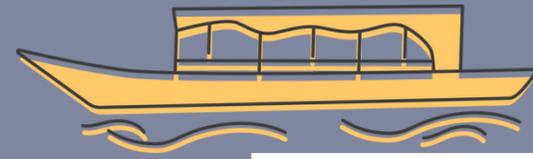
SafeChamnun Mission: Our mission is to develop and implement an IoT-based flash flood detection and warning system tailored to the unique needs and challenges of the Mekong River Basin.





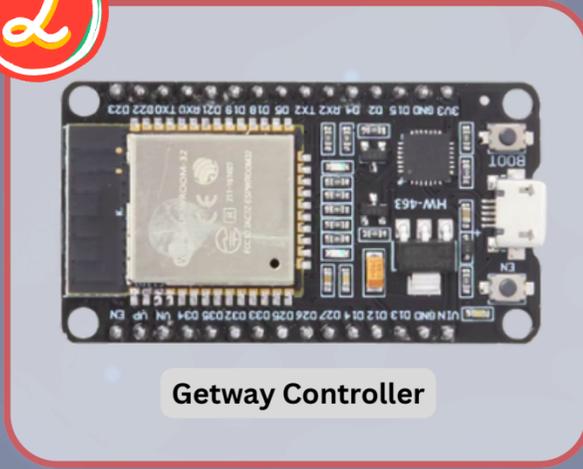
PROTOTYPES





WORKFLOW

2



Getway Controller

3



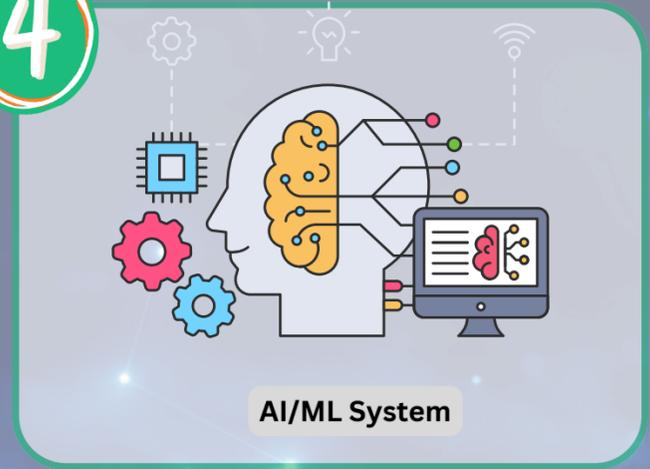
Cellular Networks

LoRaWAN

Satellite

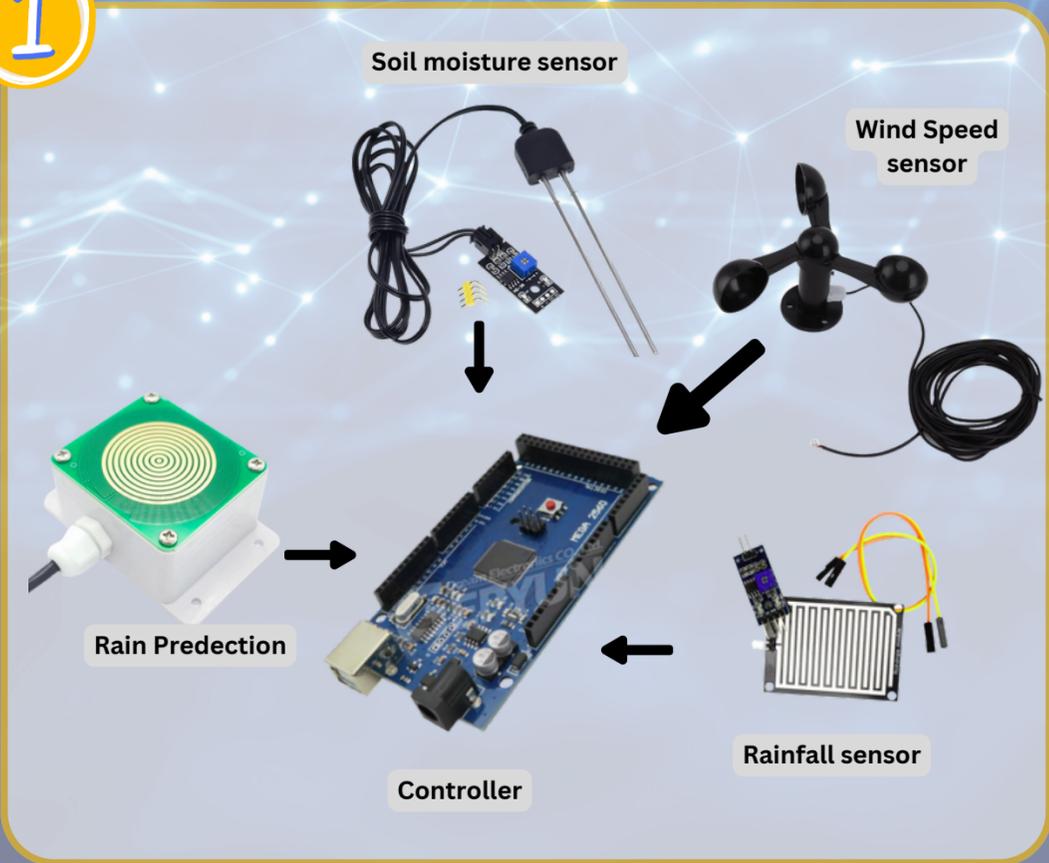
Wi-Fi

4



AI/ML System

1



Soil moisture sensor

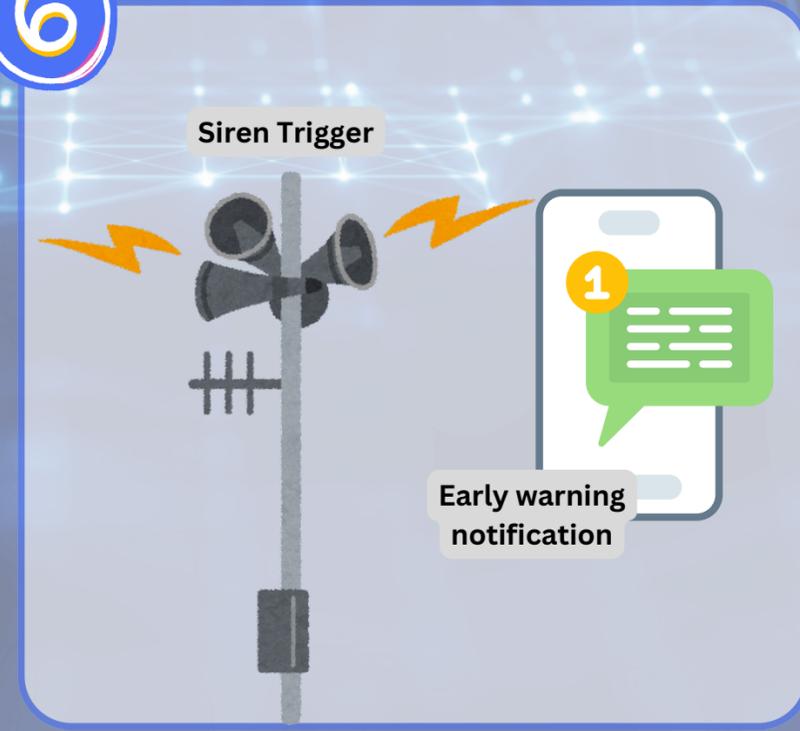
Wind Speed sensor

Rain Prediction

Controller

Rainfall sensor

6



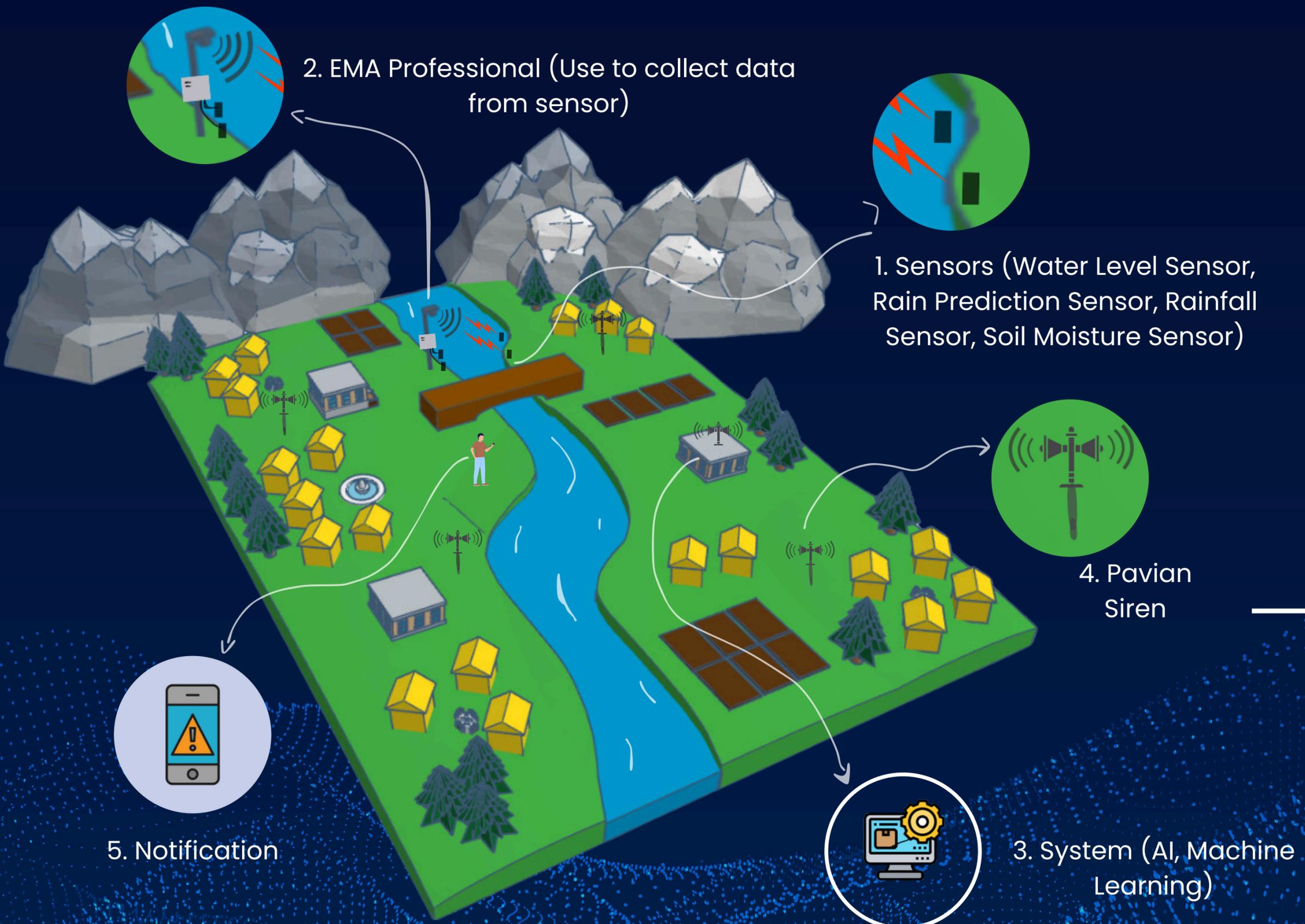
Siren Trigger

Early warning notification

5



Cloud

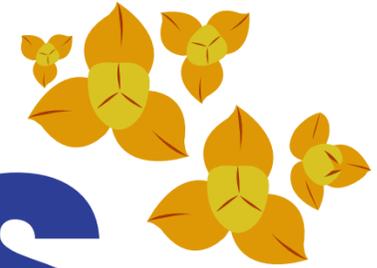


PROTOTYPES





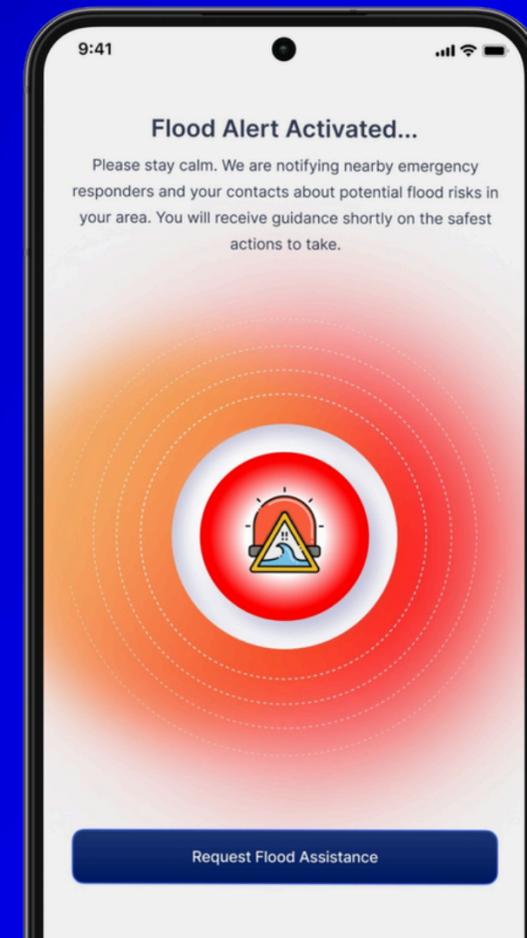
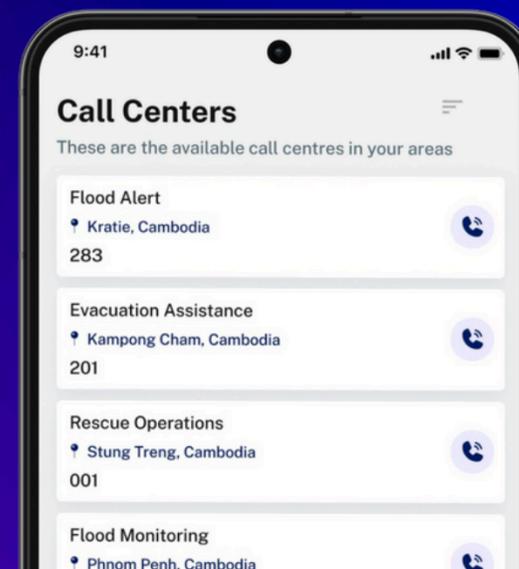
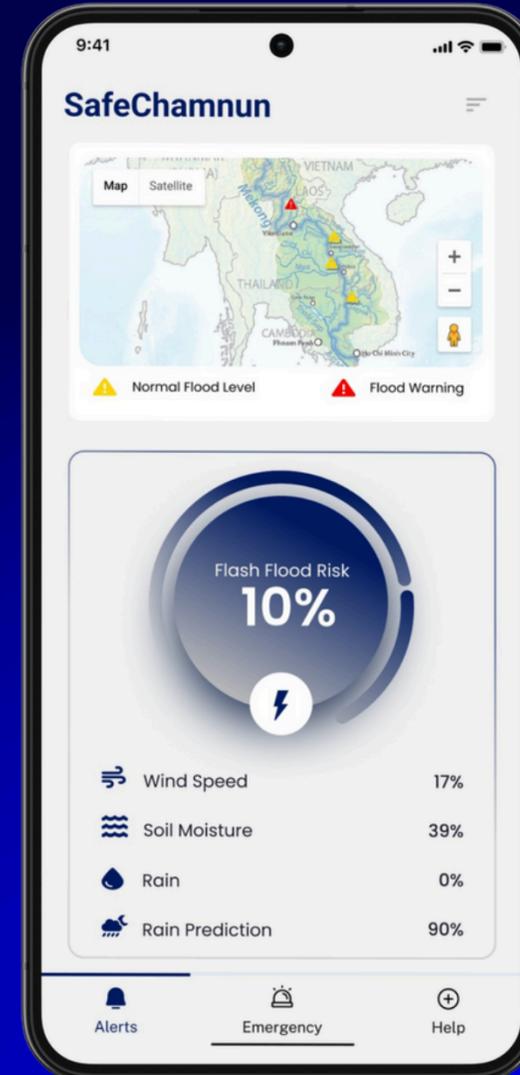
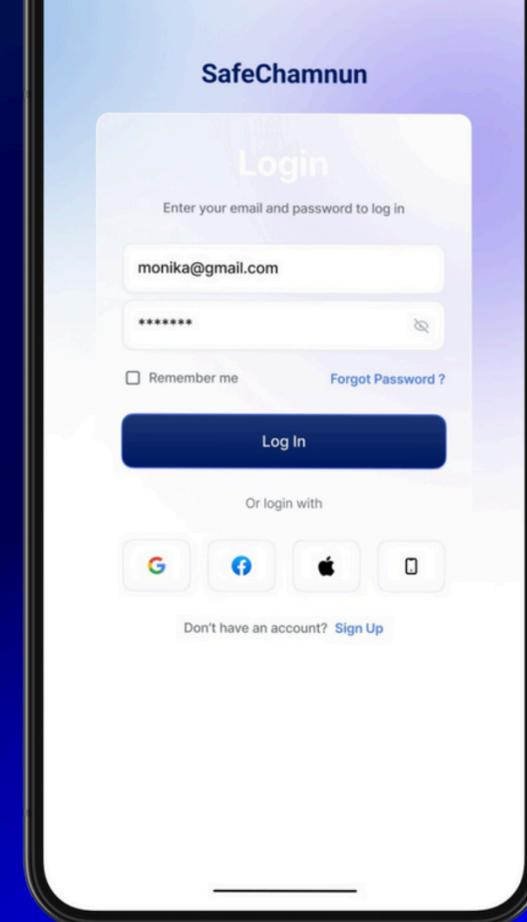
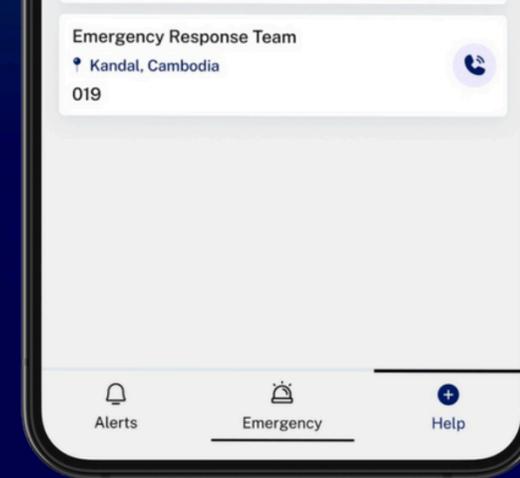
OUR FUTURES





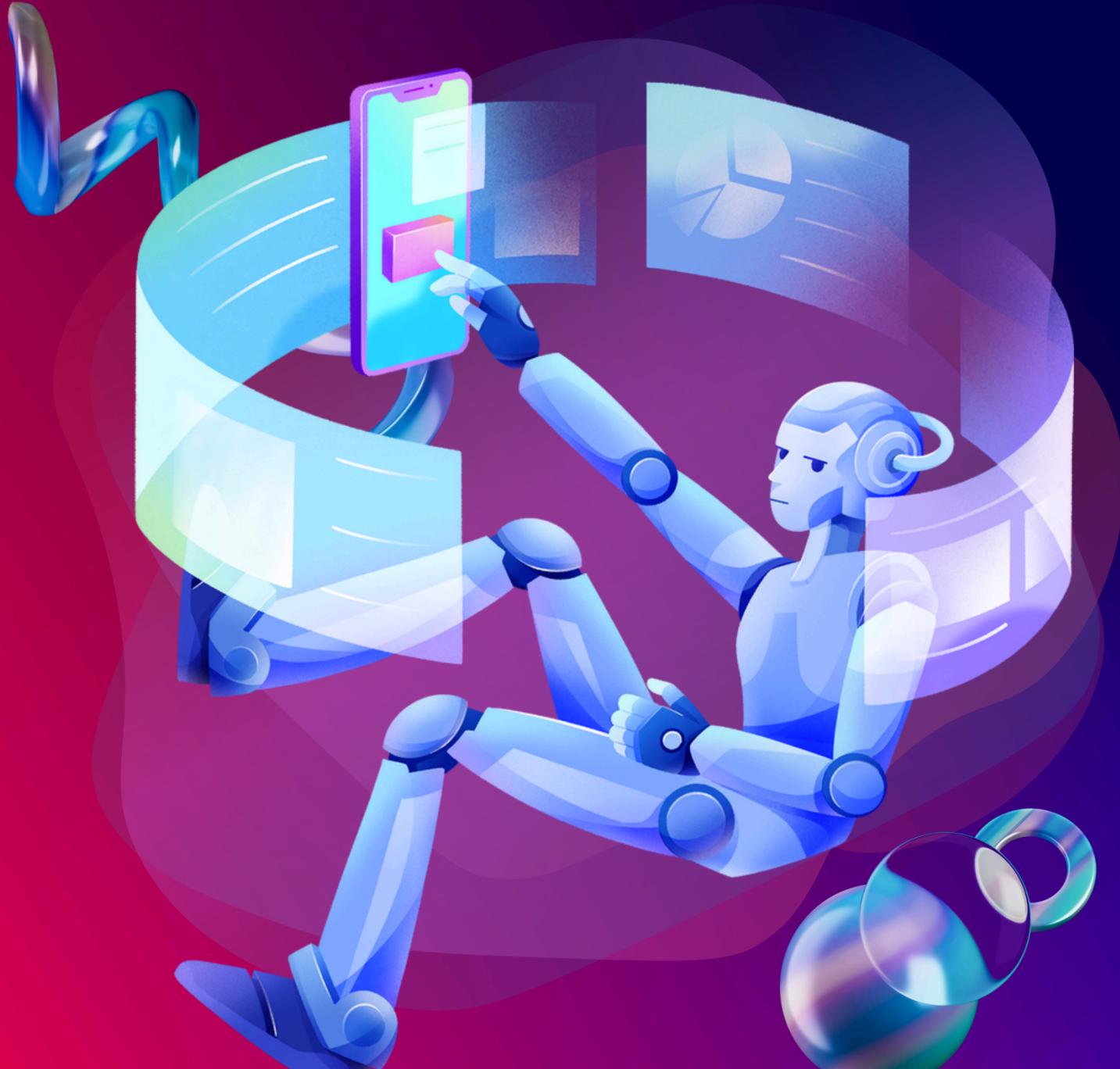
WE ARE DOING

The **Mekong River Flood Alert App** will be a essential tool for communities along the Mekong, providing real-time flood alerts, evacuation guidance, and access to local emergency contacts. Using advanced forecasting and flood mapping, the app will help residents stay informed and prepared during flood seasons, reducing risks to life and property. Future upgrades may include AI-driven predictions and integration with local government systems, making it an essential resource for flood preparedness and rapid response.





OUR NEXT STEP



**Upgrade IoT
Integration**

**Machine
Learning**

**Innovative
& Proactive**

**Stakeholder
Engagement**

**Mobile App
Monitoring**

**Adaptability
& Resilience**

**Data
Pipeline**

**Scalability
& Impactful**



WHY DO SafeChamnun





EXPECTED OUTCOMES of SafeChomnun

SafeChamnun aims to improve flood management in the Mekong River Basin through a real-time IoT sensor network that monitors water levels, rainfall, and soil moisture. Using AI-driven data analysis, the system provides early flood warnings, enabling proactive response. SafeChamnun also focuses on community resilience by offering timely alerts, educational programs, and capacity-building to strengthen preparedness. By reducing flood-related damages, it promotes socio-economic stability and sustainable development. The initiative further supports sustainability by incorporating renewable energy and building partnerships for long-term reliability, leveraging technology to safeguard lives, infrastructure and environmental resources across the **Mekong River Basin**.



CALL TO ACTION

Join **SafeChamnun** in safeguarding the Mekong River Basin against the threat of flash floods. Together, we can make a difference by implementing cutting-edge technology and empowering communities. Get involved today to support our efforts in building resilience, protecting lives, and promoting sustainable development. Contact us to learn how you can contribute or collaborate with us on this crucial mission. Together, let's create a safer and more resilient future for the Mekong River Basin.



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OUR SUPPORTER

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Mekong River Commission
For Sustainable Development

Motto

The University for your Successful Professional Career.

Vision

Our vision is to become the premier business school at the maximum standard of quality, supporting the socio-economic development of Cambodia and the Region for future generations.

Mission

Our mission is to provide students with higher education of superior quality through on-campus and digital courses, to build their: Knowledge, Professional Skills, Creativity and Innovation, Experience, Ethics, Networking, Research and publications. In order to enhance their professional careers in the future, we will at all times observe the highest principles of ethical behavior, respect for a diverse and multi-cultural society, laws and regulations and environment.

Vision for the Mekong River Basin

A Mekong River Basin that is economically prosperous, socially just, environmentally sound, and climate-resilient.

Vision for the Mekong River Commission

A world-class, financially secure, International River Basin Organisation serving the Mekong countries to achieve the Basin Vision.

Mission of the Mekong River Commission

To promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well-being.

Our Talented People



LONG Pakrigna
Supervisor

Data Science & AI Lecturer
PhD. Electrical & Electronic
Engineering



TOCH Ensophea
Founder & Leader

Data Scientist & AI Engineer
BSc. Data Science & Analytics



CHHIT Helen
Secretary

Public Relation Officer
BSc. Business IT



LAY Keangleng
Technician
Electronic Engineer
BSc. Computer Engineering



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THANK YOU