

Korea-EU Horizon Europe Researchers Networking Forum on Energy & Advanced Mobility

• **Ha Yoon Song**

• **Professor**

• **Hongik University**

• **Location Based
Service**



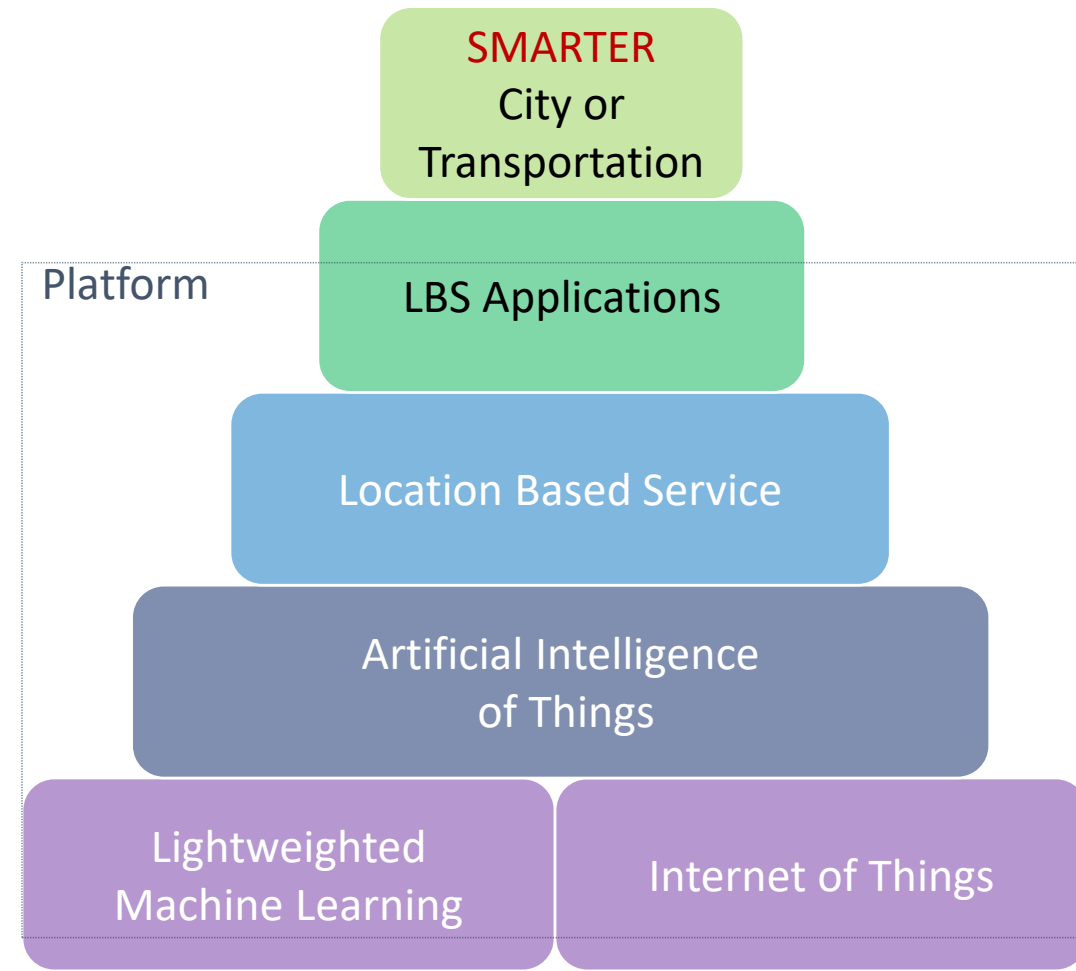
Hongik University, Seoul, Korea

- **College of Engineering**
 - **School of Electronics and Electrical Engineering**
 - **School of Chemical Engineering and Materials Science**
 - **Department of Computer Engineering**
 - **Department of Industrial and Data Engineering**
 - **Department of Mechanical and System Design Engineering**
 - **Department of Civil and Environmental Engineering**
 - **Department of Applied Science**
- **721+ Professors in College of Engineering**



Academic Experience

- **Doctor of Philosophy in Computer Science from UCLA, California, USA**
- **15+ years Research in Location Based Service**
 - **Object Mobile Pattern Formalization and its Applications**
 - **ML Model Slanderization for IoT Devices**
 - **Logistics Application of LBS**
 - **Big Data, IoT and AIoT Platforms developments**
 - **Toward MLOps of Slim Machine Learning Model Construction for AIoT ML Models**





Horizon Related Research Results

- **30+ Patents Registered and Pending**
- **50+ Research Papers**
- **For example,**
 - **Spatio-Temporal Prediction of Objects using Time Series Analysis and Machine Learning from Geopositioning Data Set**
 - **Imputation of Missing Geopositioning Data using Machine Learning**
 - **Correction of Erroneous Geopositioning Data with ML**
- **Heart Arrhythmia detection using Machine Learning**



Horizon Related Experience

- **Experience as a consortium member for EU calls**
 - **USI, 2024, DUT of Horizon Europe work programme 2025 led by Dr. Praveen Kumar Donta at Stockholm University**
 - **SCALIA, 2017, Horizon 2020 - Research and Innovation Framework Programme led by Prof. Carlos Enrique Palau Salvador at UNIVERSITAT POLITECNICA DE VALENCIA**
 - **Other miscellaneous KOR-EU joint seminar**
- **Visiting Scholar Experience**
 - **Vienna University of Technology in the year 2009**
 - **Free University Berlin in the year 2018**



Location-based Services



Location Sensitive
Billing



SOS Services



People Tracking



Vehicle /
Asset Tracking



Carpooling and
transport services



Location based
Infotainment
Services



Navigation
Services



Roadside
Assistance



Proximity-based
Marketing



Location based
Dating Services



Location based
Analytics



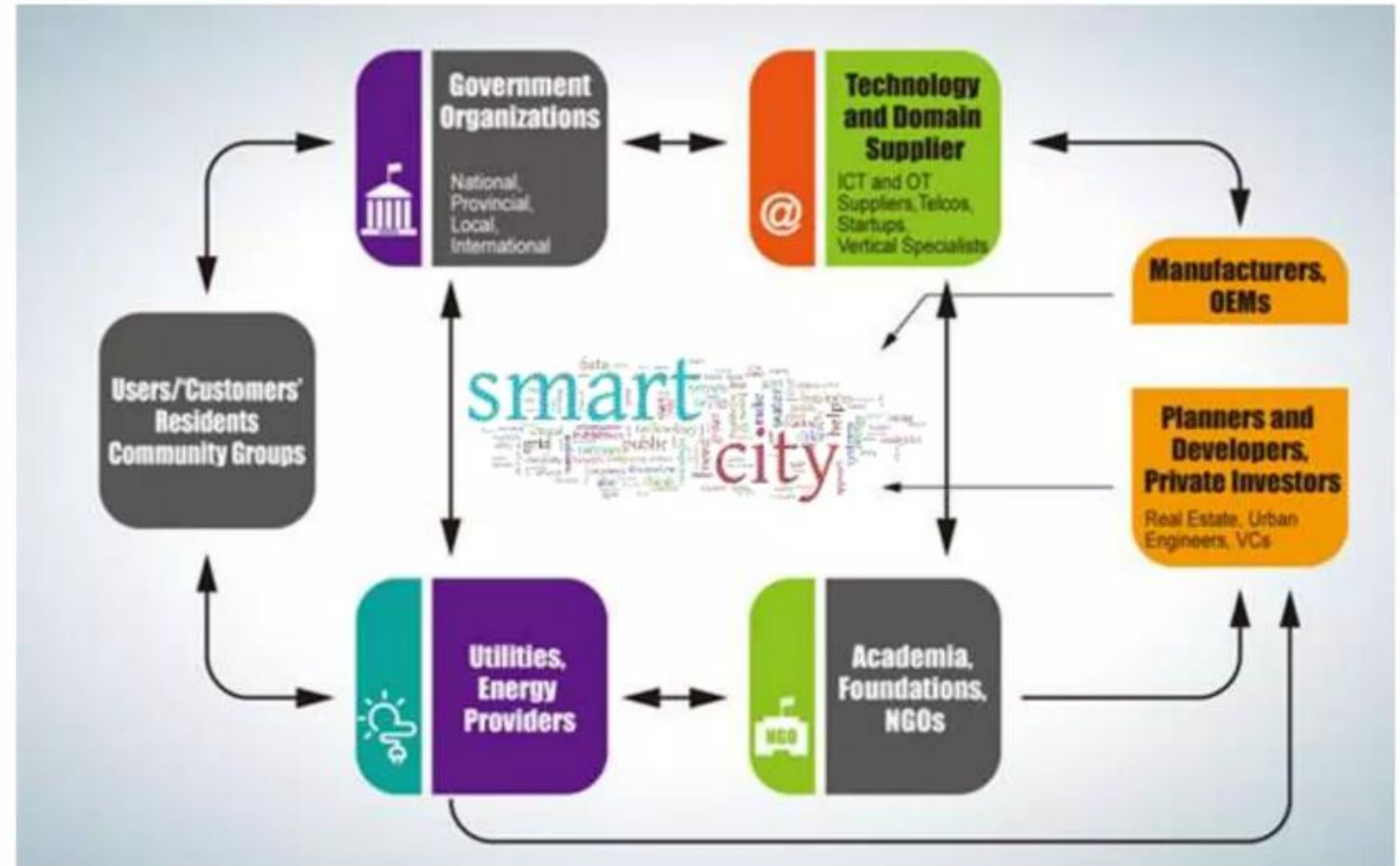
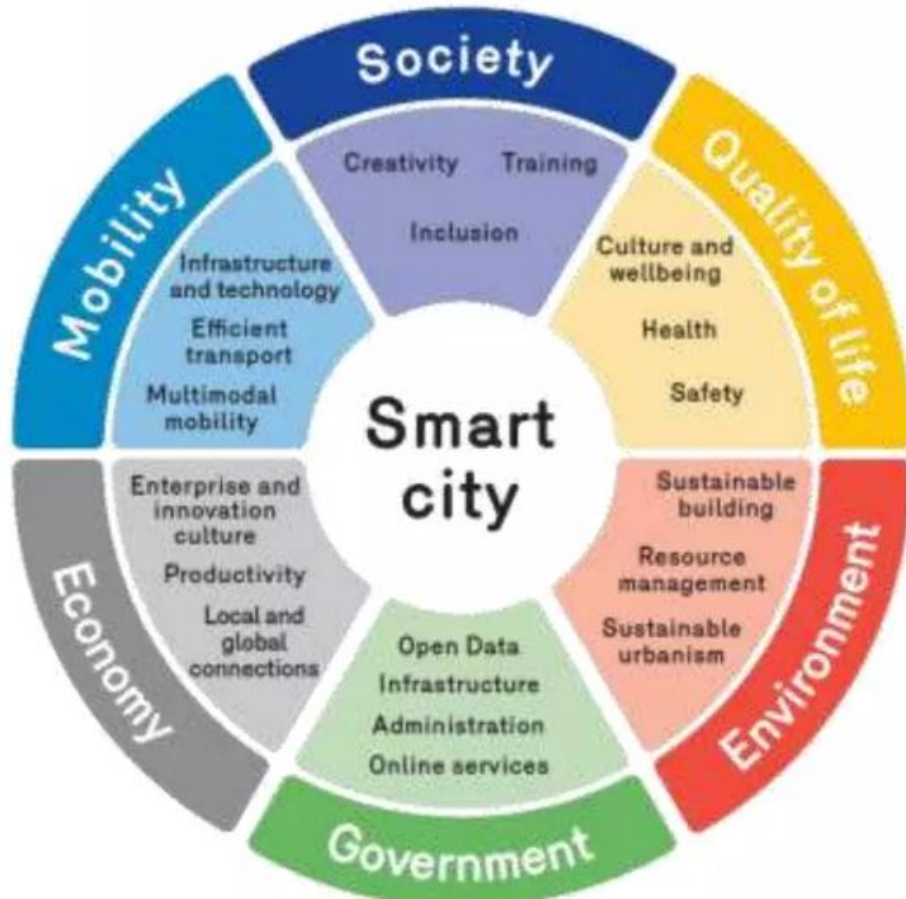
Store Locator



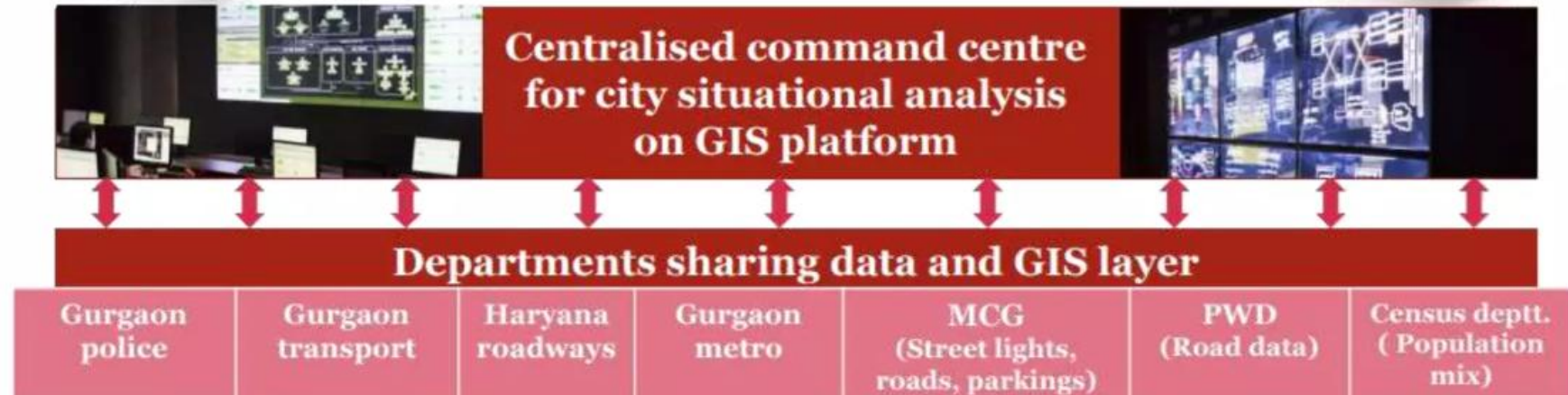
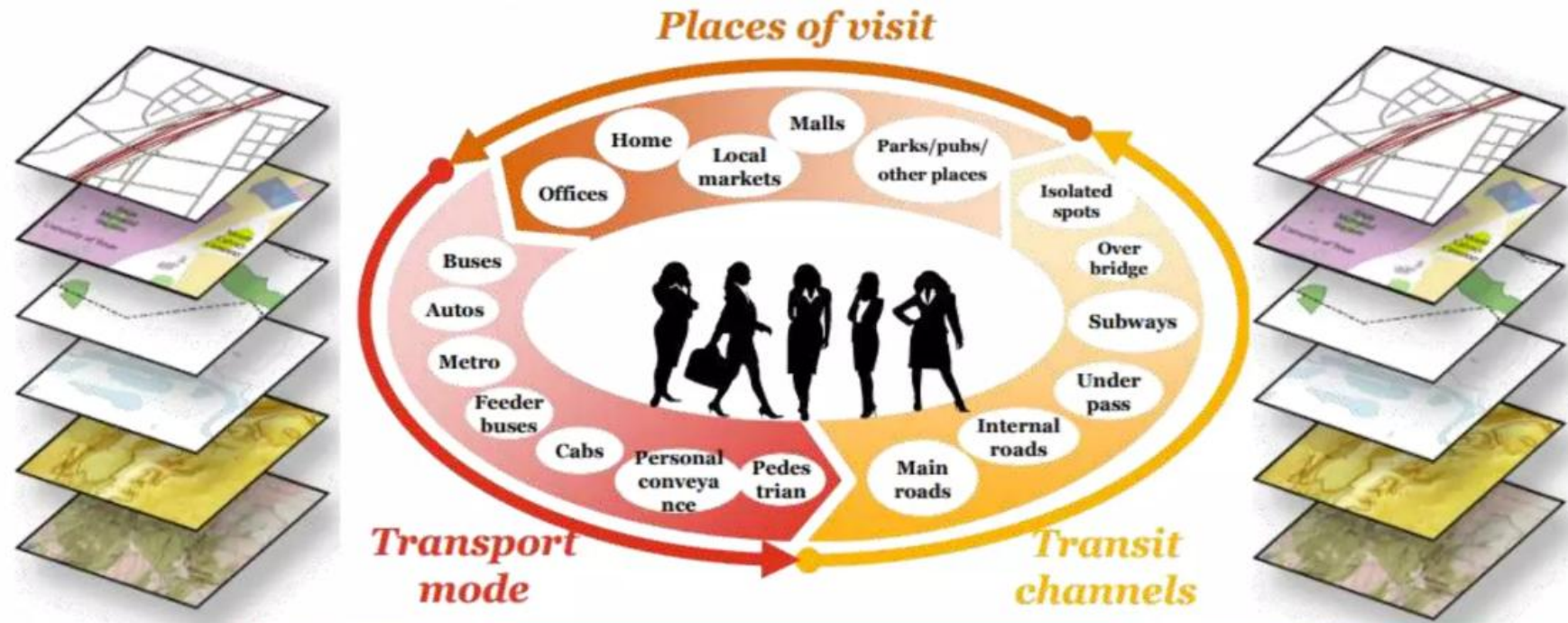
Location-based Services



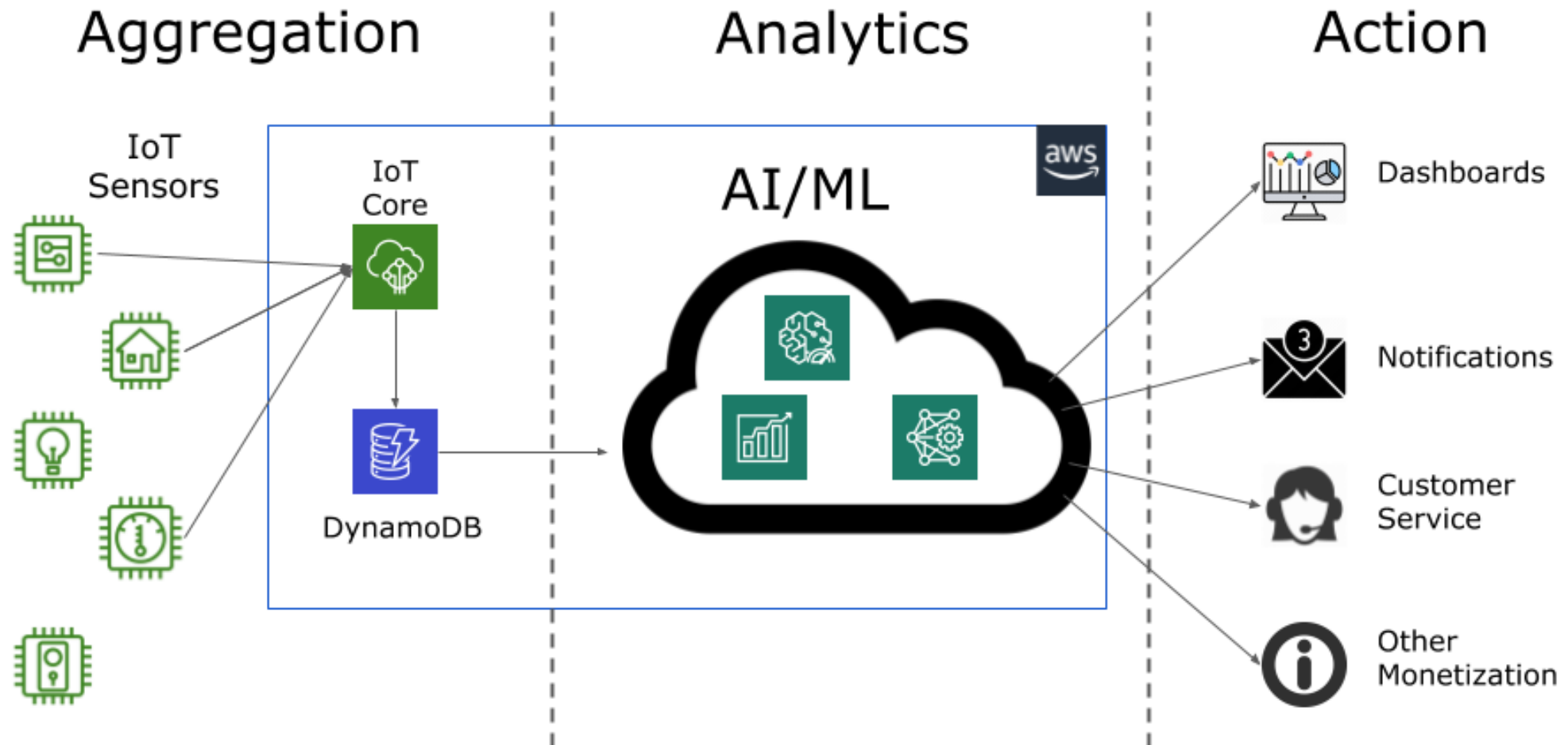
- LBS, when combined with **Data Analytics** and **City Demographics**, has tremendous potential to tap into the pulse of the city and thereby improve the quality of life for citizens



LBS for CITY



AIoT Devices



Need of Slim Machine Learning Model

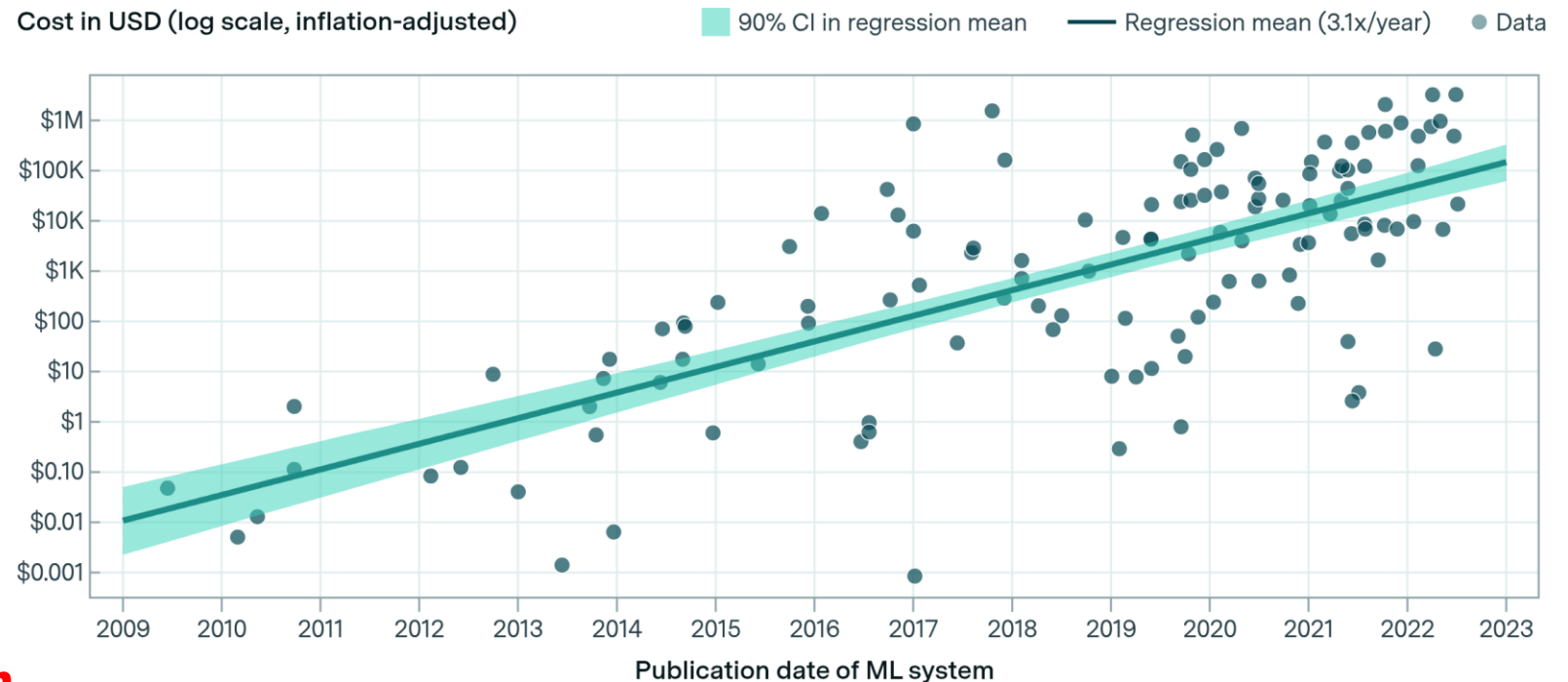
ML models needs to be reduced

- **AIoT Device has low computing power!**
- **Processor and Memory Capacity**
- **Low NW bandwidth**
- **Less GPU or No GPU required**
- **Environmental Factor based Slim Model**
- **Generation with AutoML**
- **EDGE ML can be a temporary solution**
- **Need Platforms to do this BIG Operation**

Cost of training compute for notable ML systems

EPOCH AI

Cost in USD (log scale, inflation-adjusted)



CC-BY

epoch.ai



Target Calls

For calls such as

- [Cluster 5 Call 01-2026](#)
- [Urban Mobility Explained](#)

Based on my past Research Topic

- **Objects Mobile Pattern**
- **AIoT**
- **Lightweighted ML Modeling**

For advanced **Location Based Service**

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Urban Mobility Explained (UMX) Open Call

2 JULY 2025

EIT Urban Mobility invites organisations and experts to submit proposals to its Urban Mobility Explained (UMX) Open Call, designed to accelerate the development and delivery of high-quality, sustainable professional training and support services that close the urban mobility knowledge gap.

This Call focuses on a series of specific activity areas aimed at enhancing the skills and capabilities of mobility professionals and organisations, particularly at the local/city level, to achieve systemic transformations for more livable cities. The Call supports proposals that offer high-quality, impact-oriented, and financially sustainable learning experiences, leveraging EIT Urban Mobility's network and expertise in various learning formats.

We are seeking proposals that align with the strategic objectives of EIT Urban Mobility's Academy, fostering innovation and entrepreneurship through a lifelong learning approach, and demonstrating potential for replication and scaling up. Emphasis is placed on courses that comply with EIT Label certification where applicable.

Proposals may be submitted by individual applicants or multi-participant consortia.

The following seven types of activities are eligible under this Call:

- CHA1: Face-to-face course(s) development and commercialisation
- CHA2: Face-to-face course(s) complying with the EIT Label, design and delivery
- CHA3: Face-to-Face course(s) complying with the EIT Label, development and commercialisation
- CHA4: Replicating, scaling-up, remodelling, sale of successful commercial courses and training programmes
- CHA5: Replicating, scaling-up, remodelling, delivery of successful EIT Label courses
- CHA6: Upgrading, scaling-up, remodelling of non-UMX commercial courses or repurposing non-UMX commercial courses to UMX audiences
- CHA7: Training operations support services and delivery for custom course pathways

The Urban Mobility Explained (UMX) Open Call supports activities that demonstrate clear alignment with the strategic objectives of EIT Urban Mobility's education and training portfolio, ensure compliance with the EIT Label requirements where applicable, and show strong potential for long-term impact, scalability, and financial sustainability.



Objective

- **Hope to be a part of CONSORTIUM**
 - **With a computer science base**
 - **With experience of Location Based Service Research**
 - **Korean Government (Ministry of Science and ICT) might endow matching fund in case**
- **Hopely in Cooperation with Experts**
 - **Urban Planning**
 - **City Planning**
 - **Transportation Planning**
 - **Civil Engineering**
 - **Any related fields**



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