

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

• **Sol Hee Yoon**

- **Assistant Professor**
- **Seoul National University of
Science and Technology
(SEOULTECH)**
- **Human Factors and
Ergonomics for Safe
Transportation
System
Development**



1. Introduction

Seoul National University of Science and Technology (SEOULTECH)

Campus size: 504,922 m²

Undergraduate schools: 10 colleges, 34 departments, and 6 divisions

Graduate schools: 6 (1 general graduate school, 2 special graduate schools, and 3 professional graduate schools)

Ranked #1001-1200 in QS World University Rankings 2026

Ranked #151-200 for Asian University Rankings (Eastern Asia)

Department of Safety Engineering,
Human Factors and Ergonomics Lab





2. Expertise

Human Factors & Ergonomics (HFE) Lab

Our research focuses on **Human Factors in Advanced Mobility Systems**

- Driver-Automation Interaction and Takeover in semi-autonomous vehicles
- Risk Assessment Models integrating human readiness and perceived road complexity
- Human-Machine Interface (HMI) Design for accessibility and trust in automated mobility
- AI-based Driver's Behavior Modeling

We actively collaborate with national and international universities and research centers, including Yonsei University, the Korea Stanford Center, the Korea Automotive Technology Institute, and Hanyang University.

Potential contribution to a consortium:

- Provide human-centered design and validation frameworks
- Developing risk and safety model for CCAM (Connected, Cooperative, and Automated Mobility)
- Conducting user testing and simulation experiments



3. Potential Project Idea

Targeted call: **HORIZON-CL5-2026-10-D6-01: Flagship-pilot: large-scale demonstrations of CCAM (CCAM Partnership)**

Main objectives:

To develop an AI- and human factors-based framework for predicting driver readiness, modeling perceived road complexity, and designing explainable, adaptive HMIs to support safe and trustworthy transitions in mixed traffic environments.

The project aims to:

- Build a Perceived Road Complexity Model that quantifies how drivers interpret environmental and traffic elements influencing workload and situational awareness.
- Develop an Explainable AI (XAI)-based HMI that transparently communicates system intentions and dynamically adjusts feedback intensity based on both driver readiness and road complexity.
- Integrate these components into a driver-centered risk assessment model validated through simulator studies and cross-cultural experiments.

* We are highly open to **any collaborative research that incorporates human perspective analysis** linking cognitive, behavioral, and technological dimensions to enhance safety, trust, and acceptance in automated mobility.



4. Profile You are Seeking and Why

We are seeking partners with complementary expertise in:

- AI and machine learning for mobility systems
- Vehicle HMI and interface prototyping
- Perception and behavior modeling in a real traffic environment
- Field testing and data-driven validation
- Policy, standardization, and CCAM deployment

We particularly welcome collaborations with European research centers focusing on **trust, explainability, and inclusiveness in automation**, and are **open to joining existing consortia aligned with human-centric mobility research**.



5. Contact Details

Sol Hee Yoon

Department of Safety Engineering,
Seoul National University of Science and Technology,
Seoul, Korea

Email: solheeyoon@seoultech.ac.kr

Researchgate: https://www.researchgate.net/profile/Sol-Hee-Yoon?ev=hdr_xprf

Website: <https://hfe.seoultech.ac.kr>