

# IEEE UV2024

## General Information



**IEEE UV2024 Organizing Committee**

**IEEE UV Conference Board**

<https://universalvillage.org/ieee-uv-conference/>



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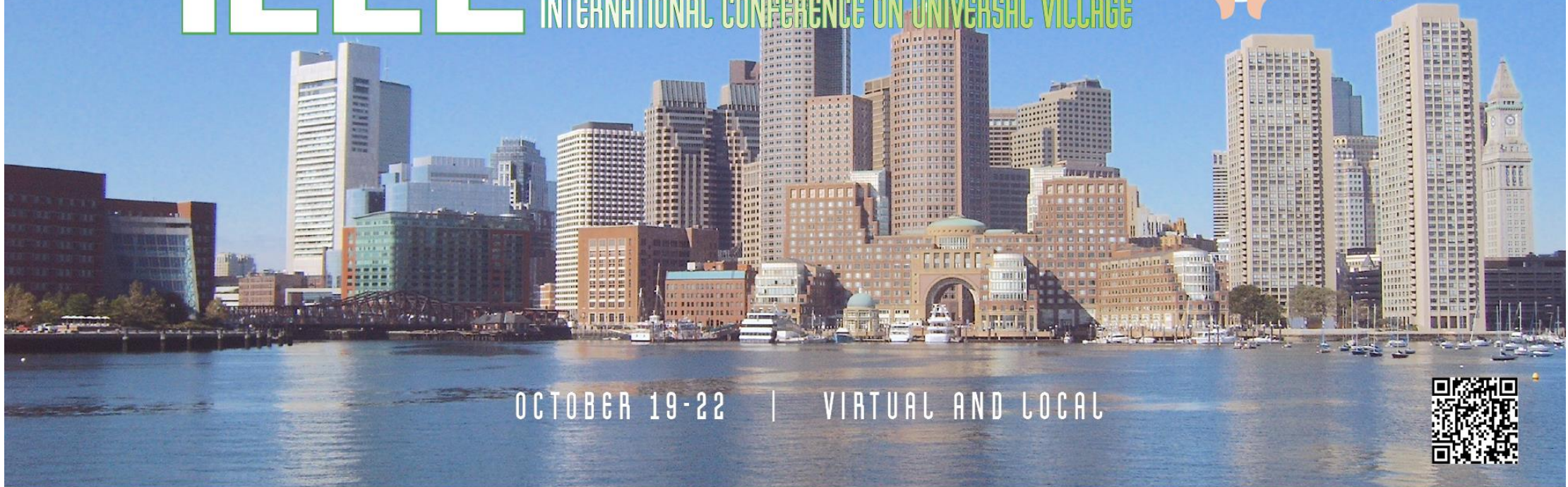
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ROBOSTREET TRUCKS

# THE 7TH IEEE UV 2024

INTERNATIONAL CONFERENCE ON UNIVERSAL VILLAGE



OCTOBER 19-22 | VIRTUAL AND LOCAL



IEEE INTERNATIONAL CONFERENCE ON UNIVERSAL VILLAGE



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# UV Concept & IEEE UV Conferences

**Universal Village (UV)** is a new concept proposed by MIT's Universal Village Program in 2012. UV exemplifies an ideal future society that pursues harmony between humans and nature through the wise use of advanced technologies.

Led by the MIT professors who initiated the MIT UV program as well as the UV conferences, the IEEE UV Conferences call for collective efforts from world-renowned experts across multi-disciplinary fields to collaborate beyond traditional field boundaries. Previous IEEE UV conferences (UV2013, UV2014, UV2016, UV2018, UV2020 and UV2022) were groundbreaking international venues that inspired successful collaboration among governments, academia, industries, and civil society.

<https://universalvillage.org/ieee-uv-conference/>



## Universal Village (UV) & Future Lifestyles



**Universal**

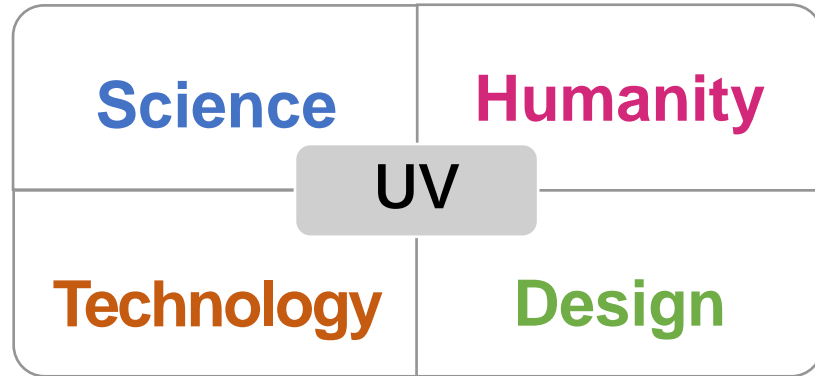
Following the laws of the universe

**Village**

Cities are not the only living environments

**Universal  
Village**

New lifestyles beyond Smart Cities  
following the laws of the universe



## 4 Impacting Factors

- ❖ UV Information Flow
- ❖ UV Material Cycles
- ❖ UV Lifestyles
- ❖ UV Communities

## 8 UV Sub-Systems

1. Smart Home and Community
2. Smart Medicine and Healthcare
3. ITS, Urban Planning and Crowd Management
4. Smart Energy Management
5. Smart City Infrastructure
6. Smart Response System for City Emergencies
7. Smart Environmental Protection
8. Smart Humanity



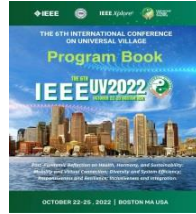
# UV SCOPE





# Previous UV Conferences

**UV2022**  
 Virtual



**POST-PANDEMIC REFLECTION ON HEALTH, HARMONY, AND SUSTAINABILITY: MOBILITY & VIRTUAL CONNECTION; DIVERSITY & SYSTEM EFFICIENCY; RESPONSIVENESS & RESILIENCE; INCLUSIVENESS & INTEGRATION**

**UV2020**  
 Boston



**INTEGRATED, SYSTEMATIC, UV-ORIENTED, SOLUTIONS FOR HARMONY, RESILIENCE, INCLUSIVENESS AND SUSTAINABILITY**

**UV2018**  
 Boston



**DIVERSITY, MOBILITY AND CONNECTIVITY FOR EMERGENCE OF HARMONY IN UNIVERSAL VILLAGE**

**UV2016**  
 Nagoya



**UV FOR REGIONS AT DIFFERENT DEVELOPMENT PHASES, PEOPLE OF DIFFERENT AGES WITH DIVERSE TECHNOLOGY & CULTURAL BACKGROUNDS**

**UV2014**  
 Boston



**INNOVATE FUTURE LIFESTYLES FOR SUSTAINABLE HAPPINESS**

**UV2013**  
 Beijing



**HUMANKIND IN HARMONY WITH NATURE THROUGH WISE USE OF TECHNOLOGY**



# IEEE UV2024 Themes



**Reflections on the Human - AI Relationship and  
AI-Pervasive Societal Transformation:**

*Human-centricity, Explainable AI,  
and Intent & Behavior Understanding  
for Integration, Resilience, Inclusiveness, and Sustainability*



# Introduction to IEEE UV2024

After the great success of IEEE UV2020 and IEEE UV2022, the 7<sup>th</sup> International Conference on Universal Village (IEEE UV2024) will be held both VIRTUALLY and LOCALLY from October 19-22, 2024.

Subjects for IEEE UV2024 include but are not limited to the following topics:

- The Human - AI Relationship and AI-Pervasive Societal Transformation
- Developing systematic methodologies to advance UV technologies and to develop UV systems, including *Intelligent Transportation Systems, Urban Planning and Crowd Management, Smart Infrastructure, Smart Response Systems for Emergencies, Smart Energy Management, Smart Environmental Protection, Smart Home and Community, Smart Medicine and Healthcare, and Smart Humanity*
- New lifestyles enabled by IT / New energy sources / New materials / Effective microorganism technology and environmental protection
- Exploring UV development paths that are appropriate for different regions at different development phases, from theoretical exploration, research development, framework design, implementation, engineering, to integration.
- Inspiring successful collaboration among governments, academia, industries, and civil society to address different UV challenges and seek practical UV solutions

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*Sophia Wei (UVS, USA)*

# IEEE UV2024 Dates and Venues



**Dates: October 19 - 22 , 2024**  
*Virtual with Local Sessions*

**Following the Successful IEEE UV2022,  
IEEE UV2024 will be Held  
Virtually & Locally**

**Email: [uv.conf.committee@universal-village.org](mailto:uv.conf.committee@universal-village.org)**

**[Website: www.UniversalVillage.org](http://www.UniversalVillage.org)**



# IEEE UV2024 Basic Structure of Sessions

## Keynote Sessions

- Organized by IEEE UV2024 program committee
- Opening remarks and invited keynote talks

## Regular Sessions

- Organized by session chairs
- Distribute “Call-for-Papers” by session chairs
- Session chairs select oral talks and review submitted papers

## Special Sessions

- Distribute “Call-for-Session-Proposals” by program committee
- Special sessions organized by special session chairs
- Special session chairs select oral talks, panels and organize paper submissions

# IEEE UV2024 Technical Session Categories - 1

- Category 1. *UV Vision, Development, and Evaluation*
- Category 2. *UV Framework Design, Modeling, and System Integration*
- Category 3. *Mobility, Planning, Management, and Infrastructure*  
*Innovations for Safety, Efficiency, and Connectivity*
- Category 4. *Energy and Material Innovations for Efficiency, Safety, and Sustainability*
- Category 5. *Manufacturing Innovations for Efficiency, Safety, and Sustainability*
- Category 6. *Agriculture Innovations for Efficiency, Safety, and Sustainability*

# IEEE UV2024 Technical Session Categories - 2

- **Category 7. Environmental Innovations for Harmony between Humans and Nature**
- **Category 8. Lifestyle Innovations for Mobility, Connectivity, Efficiency, and Happiness**
- **Category 9. Healthcare Innovations for Safety and Well-Being**
- **Category 10. Human-Centered Social Innovations for Diversity, Inclusiveness, Fairness, and Preservation of Cultural Heritage**
- **Category 11. Data Management and Algorithm Development**
- **Category 12. Special Sessions - New Proposed Sessions**





# Part I: Technical Sessions (A)

1. **[TS1] UV Vision, Development, and Evaluation**
  - **[TS1-A]** Vision for Universal Village
  - **[TS1-B]** Development Status of Universal Village
  - **[TS1-C]** UV Indices, UV Incentive Mechanisms, and Evaluation of UV Subsystems - Methods, Technologies, and Systems
  
2. **[TS2] UV Framework Design, Modeling, and System Integration**
  - **[TS2-A]** Systematic and Integrated Frameworks for UV Subsystems and Contributing Factors
  - **[TS2-B]** Intelligent Modeling, Simulation, and System Analysis
  
3. **[TS3] Mobility, Planning, Management, and Infrastructure Innovations for Safety, Efficiency, and Connectivity**
  - **[TS3-A]** Intelligent Transportation, Urban Planning, and Smart City Infrastructure
  - **[TS3-B]** Intelligent Vehicles, Mobility Support for Vulnerable Groups
  - **[TS3-C]** Crowd Management, Smart Response Systems for City Emergencies
  - **[TS3-D]** Information Flow, Communication, Networks, and Security

4. **[TS4]** *Energy and Material Innovations for Efficiency, Safety, and Sustainability*
  - **[TS4-A]** Renewable Energy and Smart Energy Management
  - **[TS4-B]** Smart Materials and Devices
  
5. **[TS5]** *Manufacturing Innovations for Efficiency, Safety, and Sustainability*
  
6. **[TS6]** *Agriculture Innovations for Efficiency, Safety, and Sustainability*
  
7. **[TS7]** *Environmental Innovations for Harmony between Humans and Nature*
  - **[TS7-A]** Smart Environmental Protection; Smart Ecological Systems
  - **[TS7-B]** Mobility-enabled Material Cycles; the Circular Economy; Trash and Scrap Collection, Processing, Reuse, and Recycling



8. **[TS8]** *Lifestyle Innovations for Mobility, Connectivity, Efficiency, and Happiness*

- **[TS8-A]** Smart Homes and Community, Virtual Living
- **[TS8-B]** Mobility, Connectivity, and Innovative Lifestyles

9. **[TS9]** *Healthcare Innovations for Safety and Well-Being*

- **[TS9-A]** AI-assisted Healthcare Monitoring
- **[TS9-B]** Smart Medicine and Smart Healthcare
- **[TS9-C]** Public Health, Epidemic Prevention and Control

10. **[TS10]** *Human-Centered Social Innovations for Diversity, Inclusiveness, Fairness, and Preservation of Cultural Heritage*

- **[TS10-A]** Urbanization and Smart Communities
- **[TS10-B]** Smart Government and Social Services
- **[TS10-C]** Integrated Solutions for Smart Humanity
- **[TS10-D]** Smart Design and Design Ethics



11. **[TS11]** *Data Management and Algorithm Development*
  - **[TS11-A]** Responsible and Ethical Data Management and Processing
  - **[TS11-B]** Learning Algorithm Development, Analysis and Interpretability
  
12. **[TS12]** *Special Sessions - New Proposed Sessions*
  - **[TS12-A]** Advances in Distributed Energy Systems: Design, Simulation and Operation
  - **[TS12-B]** Universal Village: Go Underground
  - **[TS12-C]** Future Lifestyles and Smart Communities: UV Intelligent Design for Vulnerable Groups



# UV Forums & Competitions

**UV City Forum**

**UV Student Forum**

**UV Art Forum**

**UV Competitions**

1. *UV Data Science Competition*
2. *UV Modeling Competition*
3. *UV Pitch Competition*
4. *UV K-12 Challenge*

**UV City Demonstration**

# Thank You!

*Let's work together to make IEEE UV2024  
another successful UV milestone!*

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