Workshop Proposal

Industrial metaverse (I-Meta)

Industrial metaverse is the combination and application of virtual reality with other technologies in the industrial field, describing and connecting people, machines, materials, processes, environments within the virtual space. Through the technologies such as digital twins, it seamlessly integrates and enables the interaction of the physical industrial space and the virtual industrial space, reciprocally improving industrial activities. By comprehensively simulating or emulating multiple scenarios, routes, and stages within the virtual space, it can cover the entire chain of industry and is shaping a new field with a promising and valuable future.

Aiming at providing an open and exciting platform for promoting a new industrial digital ecology, the industrial metaverse (I-Meta) workshop focuses on constructing new industrial metaverses, from multiple fundamental dimensions (such as architectures, models, mechanisms, and integration) to cutting-edge enabling technologies (such as digital twins, cloud rendering, terminal display and interaction), and supporting typical industrial scenarios (such as product design, production guidance, equipment inspection, employee training, intelligent operation, and supply chain integration).

I-Meta wants to invite all researchers and practitioners to participate and discuss new theories, architectures, technologies, patterns, or application scenarios of industrial metaverse, to share new scientific findings or practical achievements, and to describe the future vision of industrial metaverse for fostering new ideas.

Call for Papers

1st IEEE VR Internal Workshop on Industrial Metaverse
25.3.2023 in Shanghai, China (HYBRID)

Description

Industrial metaverse is the combination and application of virtual reality with other technologies in the industrial field, describing and connecting people, machines, materials, processes, and environments within the virtual space. Through the technologies such as digital twins, it seamlessly integrates and enables the interaction of the physical industrial space and the virtual industrial space, reciprocally improving industrial activities. By comprehensively simulating or emulating multiple scenarios, routes, and stages within the virtual space, it can cover the entire chain of industry and is shaping a new field with a promising and valuable future.

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Topics of interest include (but are not limited to):
1. Industrial metaverse theories, architectures, or mechanisms
2. Visualization (e.g., VR/AR/MR) technologies for industrial metaverse
3. Interaction (e.g., CPS/CPSS/digital twins) technologies for industrial metaverse
4. Tools/methods/use cases for building industrial metaverses
5. Industrial metaverse for product design
6. Industrial metaverse for production management (e.g., flexible/lean/sustainable production)
7. Industrial metaverse or related technologies for logistic management
8. Industrial metaverse for process optimization/control
9. Industrial metaverse for production environment management
10. Industrial metaverse for industrial decision-making
11. Industrial metaverse for resource management (e.g., human, materials, machines)
12. Metaverse application in typical industrial scenarios (e.g., airplane design and validation, collaborative production planning and scheduling, etc.)

Deadlines & Dates
- Paper Submission Deadline: January 9 2022

- Notification of acceptance: January 20 2023
- Camera-ready Deadline: February 3 2023
- Workshop day: March 25 2023

Contribution Formats

Following the last years, contributions are planned to be included and indexed in the IEEE digital library.

1. Research Papers (6-8 pages) Novel results in the field in the above mentioned categories related to industrial metaverse development.
2. Short Papers (up to 4 pages) Preliminary results or work in progress.
3. State of the Art Reports (6-8 pages) Surveys on the main results in this field, which will allow us to understand and compare achievements and approaches in tackling issues from the industrial metaverse communities.

Papers must be written in English and follow the IEEE Computer Society format for VR Conference Papers described at: http://junctionpublishing.org/vgtc/Tasks/camera.html

All papers and camera-ready versions have to be submitted electronically using PCS: *https://new.precisionconference.com/vr* *(select Society: VR, Conference/Journal: IEEE VR 2022; Track: I-Meta)*

Submissions will be reviewed by at least 2 PC members following a single-blind review process. Accepted papers will be given guidelines in preparing and submitting the final manuscript(s) together with the notification of acceptance.

Workshop Format

The Industrial Metaverse workshop will be a half-day event. Accepted authors for state of the art descriptions and discussion essays will present their ideas in a panel-like format. Accepted contributions for research papers will be organized in sessions consisting of presentations and discussions.

During panels we will encourage the active participation of the audience. We expect this structure to provide a more focused discussions and a lively environment. Presenters will be asked to prepare a slide presentation of their accepted contribution. The general audience of this workshop will receive the workshop's program with a set of questions in advance, which will guide the discussion in each topic's panel.

Organizers

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