Trans Realities Lab @ Design Academy Eindhoven
INTERNSHIPS 2024/5
XR / AI / Spatial and Collaborative Networked Computing

Location: Design Academy Eindhoven
Period: Temporary Internship (typically 4-6 months)
Hours: TBA
Paid: Yes
Start Date: from September 2024
To Apply: by email, direct to Professor Dr. Ian Biscoe : ian.biscoe@designacademy.nl

About the Trans Realities Lab and Design Academy Eindhoven

The Trans Realities Lab (transrealitieslab.com) is at the forefront of research into the collaborative use of networked XR environments, their role in design, research, industry and education that takes place in the "metaverse". The lab is built on a hybrid of technologies and creative practice drawn from the fields of software and systems engineering, design, performing and visual arts, and film production. We have one of the best equipped XR / spatial computing labs in the Netherlands, comprising large flexible spaces with various motion capture facilities, high performance visual computing engines, virtual production, projection, and advanced recording, sound and light systems. In addition to our core research in Transdisciplinary Design Networks (the use of networked spatial environments to foster and support collaborative transdisciplinary design regardless of location) we are currently leading several EU funded research programmes. Examples of current research programmes, include: HybridLab (Creative Europe) investigating 3D design and manufacturing in distributed digital twins; and XR-IT (Horizon Europe / EMIL) a software and systems architecture to simplify the connection and operation of distributed XR environments in real-time applications.

Design Academy Eindhoven (DAE) is considered one of the world's leading design schools, recognised internationally for its forward-thinking and renowned professors and alumni. For over 70 years it has trained aspiring designers to make their mark on the future by thinking freely and openly about what design can achieve, consistently exploring design as an instrument of material, social, environmental and critical innovation. Today it is home to a community of many nationalities and cultures, offering an environment where personal perspectives on the world can be translated into meaningful and daring propositions. The commonality at DAE is the shared political values of an inclusive society that embraces diversity in every aspect.

Internship Opportunities 2024/5:

We have several key areas which we feel provide interesting learning and participation opportunities for interns in the current period:

- Use of "AI" approaches in XR / spatial computing, including natural language interfaces for immersive environment creation and navigation;
- Design challenges for human navigation/collaboration in distributed virtual environments;
- Use of "AI" approaches to creating choreographic agents for the facilitation of transdisciplinary collaborations;
- Contextual Real-Time Digital Twins;
- Participation in use case projects for current research programmes, including distributed virtual production and Networked XR performances;
- Propose your own internship focus that you feel is relevant to our activities.

Skills Required:

Knowledge and experience in working with any of the following would be relevant to your activities as an intern at the Trans Realities Lab:

- Node.js, JavaScript, React and related full-stack technologies;
- Unreal Engine BluePrint or C++ development;
- Unity, including C#;
- Application of "AI" and machine learning technologies, especially within XR applications;
- Natural language processing, deep learning, generative AI, LLMs;
- 3D tools such as C4D, Houdini, Blender, AutoDesk, and AfterEffects;
- Vision recognition and visual computing;
- Advanced visual technologies, such as NeRF and Gaussian Splatting;
- Motion capture systems, such as xSens, Manus, OptiTrack or similar;
- XR peripherals, including HMDs;
- Networks, including knowledge of their configuration and use;
- Software source control and project management using e.g. GitHub or Perforce Helix;
- Lighting systems using DMX and ArtNet;
- Projection mapping using e.g. Resolume Arena;
- Sound recording and reproduction, including ambisonic approaches;
- Additional programming languages and tools.

Who are you?

We encourage applicants from all backgrounds.

You want an internship in a non-traditional research/design environment; working with a wide cross-section of people from engineering/design/arts/education/research; a diverse range of new technologies and approaches; exploring the futures of human computer interaction, distributed real-time computing, XR, low-latency networking, collaborative spatial networks, and applications of machine learning.

You are fluent in English both written and spoken – all development, documentation, communication and related tasks will be performed only in the English language. The Dutch language is a plus, but not necessary. The working language at DAE is English. We prefer that you live in or are easily commutable to Eindhoven when physical presence is required; remote working is by agreement with the Professor.

You will be happy working – often independently – as a member of a small team, one that comprises employees of the Trans Realities Lab, and other freelancers.

Critical thinking, investigation, adaptability and self-direction are important qualities in your role.

Excellent verbal, written and illustrative communication skills are expected.

Experience in writing up and assisting in the publishing of research findings would be a bonus.