Grenoble INP - UGA is a member of **international** engineering and management education and research **networks.** It is widely recognized in national and international rankings**.**

8 schools + **39** laboratories

8300 students

1 300 teaching, research, administrative and technical staff

Grenoble INP - UGA is a renowned public institution of higher education and research, and a major player in the Grenoble ecosystem. It is the engineering and management institute of Grenoble Alpes University, and plays a leading role in the scientific and industrial community.

Researcher in Virtual Reality for Model-Based Systems Engineering

Job reference number	
Research field	Collaborative & Integrated Engineering Design
Host laboratory	G-SCOP (UMR 5272 Grenoble-INP, UGA and CNRS) / Website : https://g-scop.grenoble-inp.fr/
Researcher profile	First stage researcher - doctorate (R1) / Recognised researcher (R2) / Established researcher (R3) /Leading researcher (R4)
Location	Grenoble, France
Date of recruitment / contract length	15/04/2023 (18 mois)
Contacts	Romain Pinquié romain.pinquie@grenoble-inp.fr

Research

G-SCOP is a multi-disciplinary laboratory dedicated to meeting the scientific challenges posed by changes in the industrial world. The laboratory's scope ranges from product design to managing production systems, and draws on strong skills in design sciences and optimisation. The research engineer will join the Collaborative and Integrated Design team and the VISION-R advanced interactive visualisation technology platform. The aim of the Collaborative and Integrated Design skills area is to understand and model the interactions between experts and trades involved in the design of manufacturing products and/or associated services and to propose supports (based on business representations), tools (integrated into designers' environments) and methods (integrated into the company's organisation) to facilitate these interactions.

Offer description:

As part of the MIMESIS joint research laboratory between G-SCOP and the software editor SKYDEA, you will be involved in the invention, specification, development and evaluation of new interactive 3D interfaces - stereoscopic or otherwise - for collaborative (a)synchronous architecture design of technological systems (commercial aircraft, space launchers, satellites, automobiles, nuclear reactors, medical injection devices, etc.).

Modelling interfaces will be developed using the software (SkyReal, Unreal, Unity, etc.) and hardware (HMDs, CAVe, mini CAVe, touch screen wall, touch table, etc.) of G-SCOP's VISION-R advanced visualisation technology platform.

You will work as part of a small, dynamic team of engineers, PhD students, post-docs and researchers attached to the joint research lab, which regularly interacts with private partners to mature demonstrators with business users and industrial data. You will also be a member of G-SCOP's Collaborative and Integrated Design research team and participate in its scientific activities (team seminars, lab days, workshops, etc.).

You will participate in international conferences, publish your results in international journals, and contribute to scientific and industrial working groups.

Main tasks:

- Needs elicitation
- Literature review and technological benchmarking
- Specification, design, development and testing of virtual reality applications on Unreal Engine
- Definition and development of means of storing and exchanging systems engineering data
- Design and production of experiments
- Documentation of software applications

Desired skills:

- **Interactive visualisation:**
  - Virtual reality development (Unreal) and computer graphics
  - Human-computer interaction
  - HCI ergonomics
  - Geometric modelling (Parametric, B-Rep, CSG, polyhedral, direct, etc.)
- **Systems engineering:**
  - Conceptual systems modelling (SysML, UML, Capella, System composer, OPM, BPMN...)
  - Continuous/discrete/hybrid systems simulation (Modelica, Bond graph, Simscape, Stateflow, Simulink)
  - Systems engineering data interoperability (FMI, ReqIF, LOTAR, MoSSEC, Canonical XMI, OSLC, APIs...)
  - Graph-oriented databases and ontologies for knowledge graph creation (Neo4j, Grakn, OWL...)
- **Research methods:**
  - Quantitative (design of experiments, statistics, etc.) and qualitative (benchmarking, interviews, surveys, questionnaires, task and activity analysis, coding, focus groups, etc.) research methods.
  - Writing of scientific articles
  - Written and spoken English

Profile:

- You have a PhD in computer science or digital engineering.
- You have proven experience in virtual reality or computer graphics

Specific requirements or conditions

Position assigned to a restricted area: NO

How to apply

Applications (CV, PhD thesis manuscript, journal or conference papers, recommendation letter) must be sent to romain.pinquie@grenoble-inp.fr

Application deadline: 01/03/2024