

In der aktuellen Covid-19 Situation laufen die Rekrutierungen weiter. Es kann dabei allerdings zu Verzögerungen kommen. Vielen Dank für Ihr Verständnis.

Postdoc - 3D Modeling and Virtual Reality Creation of Natural Forest Environments

100%, Zurich, temporary

The newly created Forest Resources Management group FORM at ETH's Institute of Terrestrial Ecosystems within the Department of Environmental Systems Science is looking for outstanding postdoctoral researchers with expertise in designing engaging interactive media and immersive virtual content.

The candidates are expected to be forward thinking in their creative- and research agenda, enthusiastically engage with the public and university, and excel teaching in the classroom and online. They will embrace the opportunity to augment our faculty's strengths in 3D content creation and game design, while shaping the evolution of our forays into interactive media creation and virtual reality storytelling in forest resources management.

This position is key to bridging creative, conceptual, and scientific alliances between traditional research in forestry, remote sensing, and cutting edge virtual reality applications.

Project background

People at FORM focus on questions related to the development and enhancement of IT based decision support systems (DSS) used in the management of forest resources. These DSS cover various management scales, ranging from a single forest stand to landscape level. Based on information on current forest conditions, obtained via traditional inventories, or using remote sensing (e.g. Lidar), our DSS predict the development of forest conditions over time, allowing a comparison of the consequences of various management approaches, climate change, windthrow, etc.

The output from such models is, however, often quite abstract and difficult to interpret. We are therefore aiming to create an immersive experience, allowing users to view both the model as well as modelling output in a virtual environment.

Job description

The successful candidate will work with students to design and build multidisciplinary simulation

prototypes and user-experiences employing rigorous simulation methods. You will collaborate with other researchers in the group to enhance current data flows into and from various forest management tools, ultimately linking forest management models into a VR (virtual reality) environment. You will:

- (a) Develop an approach to use Lidar point clouds and other information sources to develop a virtual forest based on DSS model output.
- (b) Create educational resources for- and contribute to the development of lectures/ courses in the field of 3D Modeling and Virtual Reality in forestry and the environmental sciences.

The objectives will be to:

- Develop a workflow for 3D parametrization of modelling output, eg using ESRI's City Engine, and the Unreal engine.
- Link existing forest management models into a VR environment.
- Assess current limitations regarding the level of detail required by scientists, and computational capacity available for a desktop VR application.
- Design an immersive forest experience based on the above.

You will also be expected to develop independent research to support your future career in academic- or industrial research. You will assist Prof. Griess with organisational and oversight responsibilities on various ongoing and future projects. You will mentor and work with student researchers, and contribute to teaching courses in the department's graduate and undergraduate curriculum. Overall, you will contribute to and participate in the life and development of the research group, advise students, author and co-author scientific publications, present research at conferences and events, serve on committees, and participate in the broader university and disciplinary communities.

Terms of employment

This is a 3 year full-time position. The desired starting date is March 01, 2021, a different starting date can be discussed. The position is open until filled. [Detailed information regarding employment and salaries at ETH can be found here.](#)

Your profile

Essential experience, skills and characteristics

- A relevant PhD in computer sciences, digital arts, geography, environmental sciences, forest sciences, or a related discipline, obtained no more than 5 year ago.

- Demonstrated expertise in multiple tools for authoring media in a VR environment, including but not limited to: Unity, Unreal, Avid, Adobe, 3D modeling/animation applications, coding/scripting languages, spherical video cinematography, etc.
- Detailed knowledge of established and experimental workflows for VR content creation and awareness of emerging developments in the field.
- English proficiency.
- Demonstrated ability to communicate and work collaboratively within a culturally diverse community of students, faculty, staff, and administrators.
- Good publication record in international peer reviewed journals.
- Ability to work independently, with flexibility, humour and critical thinking.

Desirable criteria

- Familiarity with, and interest in, video games, their development and research use.
- Experience teaching online or creating resources for education in an online environment.
- Familiarity with Python and/or C++ scripting for animation tools and game engines.
- Familiarity with 360-degree video production and post-production.
- Experience in developing curricula for emerging media.

ETH Zurich

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[Working, teaching and research at ETH Zurich](#) 

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Interested?

We look forward to receiving your online application including the following information:

- Letter of motivation, no more than 2 pages in length, describing your motivation to apply for this specific posting, your career goals, as well as a short description that separately and clearly addresses how you possess each of the qualifications listed above
- Detailed CV
- Publication list

- Copy of PhD diploma or equivalent
- Contact details of 2-3 references
- Any additional material you wish to share.

All documents must be in PDF format and must not be compressed. Please note that we exclusively accept applications submitted through our online application portal.

ETH strives to be a workplace free from discrimination and with equal opportunities for all.

For further information please contact Prof. Verena Griess at verena.griess@usys.ethz.ch (no applications).

Your workplace

