ETH zürich

Search for a Research Assistant or Postdoc on our Moorea Avatar project

Position available: Research Assistant or Postdoc for
3D/4D modeling of South Pacific Islands (Moorea IDEA Avatar).
An environmental modeling project for the South Pacific Islands Moorea and Tetiaroa is underway, dealing with circulation models, biological connectivity, ecological networks and social dynamics. For this certain base data is needed, which describes the physical state of the island and into which all kind of information can be imbedded. Ideally this would be a spatial information system, to be used as database for administration, analysis and representation of the data. Important base data is a 3D landscape model, whose essential components are a Digital Terrain Model, buildings, roads, and vegetation. Such models have already been created from high-resolution satellite stereo images and Lidar flight data. In a second step the landscape model will be combined with a bathymetric model, including the reef and lagoon topography (mooreaidea.ethz.ch). The generation of the bathymetric model is currently one of our foci. For this purpose we use aerial Lidar data, UAV images and underwater photogrammetry. We are also developing deep learning procedures for the segmentation of corals in underwater images. In a plan for the future we will expand our coral recording work to large areas using UUV technology.
Requirements: The successful candidate has a Master or PhD degree in Geomatics or a neighboring discipline. He/she is familiar with digital photogrammetric measurements and modeling (geometry and texture), as well as with Lidar point cloud processing. This expertise includes mathematical modelling, statistical analysis and broad programming skills. He/she is interested in deep learning and prepared and capable to work in a highly interdisciplinary and international group of scientists and is able to perform the work largely autonomously.
Tasks: 3D model generation from images and point clouds, underwater photogrammetry, image classification for habitat mapping (applying deep learning), familiarity with autonomous camera platforms, webpage maintenance.
Work Place: ETH Zurich, Institute of Theoretical Physics, Platform for Advanced Scientific Computing
Salary: According to ETH Zurich rules, commensurate with experience (from CHF 75K to 91K)
Start of Work: 1 June 2020
Duration of Employment: 2 years with possibility of extension
Application material: Letter of motivation, CV, list of publications, certificates, 2 references
Reference Person: Prof. em. Dr. Armin Gruen, agruen@geod.baug.ethz.ch
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