

## Accepted Manuscript

GeoPose3K: Mountain Landscape Dataset for Camera Pose Estimation in Outdoor Environments

Jan Brejcha, Martin Čadík

PII: S0262-8856(17)30096-3  
DOI: doi: [10.1016/j.imavis.2017.05.009](https://doi.org/10.1016/j.imavis.2017.05.009)  
Reference: IMAVIS 3622

To appear in: *Image and Vision Computing*

Received date: 18 August 2016  
Revised date: 10 February 2017  
Accepted date: 13 May 2017



Please cite this article as: Jan Brejcha, Martin Čadík, GeoPose3K: Mountain Landscape Dataset for Camera Pose Estimation in Outdoor Environments, *Image and Vision Computing* (2017), doi: [10.1016/j.imavis.2017.05.009](https://doi.org/10.1016/j.imavis.2017.05.009)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# GeoPose3K: Mountain Landscape Dataset for Camera Pose Estimation in Outdoor Environments

Jan Brejcha<sup>a,\*</sup>, Martin Čadík<sup>a</sup>

<sup>a</sup> Faculty of Information Technology,  
Brno University of Technology,  
Božetěchova 1/2 612 66 Brno, Czech Republic

---

## Abstract

We introduce a new dataset called *GeoPose3K* which contains over three thousand precise camera poses of mountain landscape images. In addition to camera location and orientation, we provide data for the training and evaluation of computer vision methods and applications in the context of outdoor scenes; synthetic depth maps, normal maps, illumination simulation and semantic labels. In order to illustrate properties of the dataset, we compare results achieved by state-of-the-art visual geo-localization method on *GeoPose3K* with results achieved on an existing dataset for visual geo-localization. So as to foster research of computer vision algorithms for outdoor environments, several novel future use-cases of our new *GeoPose3K* dataset are proposed.

*Keywords:* camera pose estimation, visual geo-localization, camera orientation estimation, image-to-model registration, digital terrain models, semantic segmentation

---

## 1. Introduction

Camera location and orientation are key attributes of every photograph. Many non-conventional applications can be developed, with a known location and the orientation of a camera. These include computational photography and

---

\*Corresponding author  
Email address: [ibrejcha@fit.vutbr.cz](mailto:ibrejcha@fit.vutbr.cz) (Jan Brejcha)

Download English Version:

<https://daneshyari.com/en/article/4968935>

Download Persian Version:

<https://daneshyari.com/article/4968935>

[Daneshyari.com](https://daneshyari.com)