Cover Letter

A Fast Method for Detecting Rock Blocks and Calculating Volumes and 3D Surface Areas

Ali Polat

Dear Editors-in-Chief,

please find the enclosed manuscript "A Fast Method for Detecting Rock Blocks and Calculating Volumes and 3D Surface Areas" which i am submitting for exclusive consideration for publication in Computers & Geosciences. I confirm that the submission follows all the requirements and includes all the items of the submission checklist.

The manuscript presents a fast method for detecting rock blocks. Rock blocks were detected precisely using the U-Net network and transfer learning method. Train IoU, validation IoU, train F1-score and validation F1-score were calculated as 0.8497%, 0.8461%, 0.9186%, and 0.9152%, respectively. An algorithm was developed to calculate the volume and 3D surface area of rock blocks. The methods and algorithms used in the study can be used in many fields, such as engineering applications and geological-geomorphological studies.

I provide the source codes in a public repository with details listed in the section "Code availability".

Thanks for your consideration.

Sincerely,

Ali Polat
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Delete before submission:
Please confirm that your submission follows all the requirements of the guidelines, including the submission checklist:
- Cover letter
- Highlights
- Authorship statement
- The manuscript must be single column and double spaced
- Reference must be in the author-date format
- Code availability section

*The manuscripts that do meet the requirement guidelines will be desk-rejected.