Dr. Benjamin Purinton

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Education

PhD (*magna cum laude*), Remote Sensing, University of Potsdam, Germany — February 2020

"Remote Sensing Applications to Earth Surface Processes in the Eastern Central Andes"
(Advisor: Prof. Dr. Bodo Bookhagen)

MSc, Geology, University of Potsdam, Germany — November 2016

"Validation of DEMs & Derived Geomorphic Metrics on the Southern Central Andean Plateau"
(Advisor: Prof. Dr. Bodo Bookhagen)

BA (*high honors*), Earth & Environmental Sciences, Wesleyan University, USA — May 2013

"The Hydrologic & Geomorphic Impacts of the 2010 Fourmile Canyon Fire, Boulder Creek Watershed, CO"
(Advisor: Prof. Peter Patton)

Professional Experience

August 2022 –	Field liaison for international arctic research efforts based out of Nome, Alaska
June 2020 –	Post-Doctoral Researcher and Instructor, University of Potsdam, Germany
2017 – 2020	PhD Candidate and Teaching Assistant, University of Potsdam, Germany
March 2015 – 2019	Fieldwork in the Eastern Central Andes for master's and doctoral theses
Summer 2012	Keck Consortium funded fieldwork for Colorado Front Range bachelor's thesis
Spring 2012	Geochemistry lab technician at Wesleyan University
Summer 2011	NSF funded research intern at Lamont-Doherty Earth Observatory

Personal Research Statement

My research intersects remote sensing and quantitative geomorphology using satellite and field data, bridging gaps between observations from meters to hundreds of kilometers away. I disseminate my work through cutting-edge classes and open-source practices. My current projects include generation of high-resolution surface models, measuring environmental particle-size distributions, and analyzing the frequency spectrum of topographic data.

Skills

Coding:

- Python (5+ years) — Geospatial and statistical tasks with publication of algorithms
- Matlab (5+ years) — Analysis of multispectral remote sensing and topographic data
- Bash Scripting (5+ years) — Managing large server- or cloud-based datasets and creating workflows

Software:

- GIS and Remote Sensing — QGIS, ArcGIS, GMT, GDAL/OGR, ENVI, PCI-Geomatica, SNAP
- Point Clouds — Agisoft Metashape, Pix4D, CloudCompare, LAStools, PDAL
- Topographic Analysis — TopoToolbox (Matlab), LSDTopoTools (Command Line)
- Other — Adobe Illustrator, LaTeX, markdown, and pandoc for producing high-quality documents and figures

Methods:

- Technical scientific writing and communication to wider audiences
- Quantitative statistical analysis of large environmental datasets, including principles of machine learning
- Optical and radar satellite data management, image processing, and analysis
- Collection and processing of precise geodetic measurements
- Certified EU Aviation Safety Agency A2 drone pilot
- Structure-from-Motion processing of photo surveys to generate point clouds and digital surface models