

Appendix — Pixels2Peaks: Converting Terrain Images to Heightmaps

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A Prompts used for VLM

We used the following prompt inputs for VLM [Google 2025], which were followed by an output cleaning step, to extract elevation and slope.

A.1 Estimating elevation

- Estimate the approximate height of this terrain in meters. Also give the approximate elevation/altitude of the lowest and the highest visible point in this image. Think step by step.
- Based on the provided image, please estimate the approx elevation above sea level (in meters) for: 1) The lowest point clearly visible. 2) The highest peak visible within the frame.
- Analyze this terrain image. Provide an estimate for the elevation above sea level, from the lowest point visible and the highest peak visible (in meters).
- Examine the landscape shown in this image. What are your best estimates for the minimum and maximum altitudes (in meters) visible within the picture?
- Can you identify the approximate geographical region or mountain range depicted in this image? Based on that (or general terrain analysis if unidentified), please estimate the elevation above sea level (in meters) for the lowest and highest points shown.

A.2 Estimating slope

- Based on the provided image, estimate the approximate average slope (in degrees) for the terrain. Think step-by-step.
- Analyze this terrain image and quantify the approximate average incline angle in degrees. Think step-by-step.
- Using visual cues in this landscape photo, what would you estimate the mean gradient (in degrees) to be? Think step-by-step.
- From the visible features in this terrain image, calculate the approximate mean incline in degrees. Think step-by-step.
- Looking at this landscape photo, provide your estimate of the terrain’s average slope angle. Think step-by-step.

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B MESA evaluation prompts

We used the following prompts from the MESA [Czerkawski et al. 2025] project page to derive the depression maps.

- Mountains in the Alps in January
- Broadleaf forests and hills in Germany in August
- Moist forests and plains in Bolivia in July
- Norway fjords
- Puna and mountains in Bolivia in May
- Shrublands and mountains in United States of America in May
- Dry woodlands steppe and mountains in Tunisia in July
- Temperate forests and mountains in New Zealand in November
- Tundra and mountains in United States of America in November

References

- Mikolaj Czerkawski, Rosalie Martin, Romain Rouffet, et al. 2025. MESA: Text-driven terrain generation using latent diffusion and global copernicus data. In *Proceedings of the Computer Vision and Pattern Recognition Conference*. 3067–3075.
- Google. 2025. Gemma 3. (2025). <https://goo.gle/Gemma3Report>