

Step I : Data Construction



Step II: SFT Fine-tuning



Country Identification

Clues: [buildings, signs, Siberian climate]
Reasoning: Russian-style builds and Siberian setting, plus Cyrillic script place it in Russia. Conclusion: Russia

Regional Guess

Clues: [Water body, bare rock opposite]
Reasoning: North water plus opposite rocks match Baikal's relief, pointing to Oblast. Conclusion: Oblast

Precise Localization:

Clues: [Olkhon-type terrain, road angle]
Reasoning: Road angle match Khuzhir on Olkhon, Baikal proximity seals it.
Conclusion: Khuzhir, Olkhon Island

Final Answer: Russia, Oblast, Khuzhir, Olkhon Island

Data

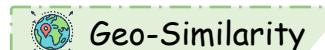


SFT-Training

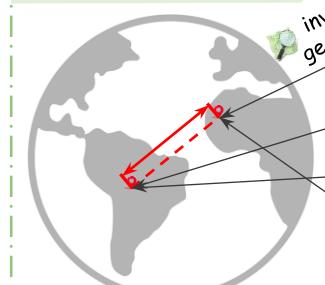


GeoAgent-SFT
Qwen2.5-VL

Step III: GRPO Fine-tuning



Geo-Similarity



GPS Coordinate

40.738° -78.125° GT

Spatial Similarity

40.738° -78.125° Pred

Country Region Precise Pred

Country Region Precise GT Semantic Similarity

Address

Geo-Similarity Reward

Base Model



GeoAgent
Qwen2.5-VL



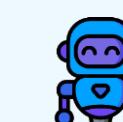
Answer

Level-Judge ✓/✗

Reply



Consistency Reward



Consistency Agent
Qwen3



Clues

Reason

Answer