

1. Load cleaned panel: read  
`sa_daily_panel.parquet` (hotspots + weather)

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graph TD; A[1. Load cleaned panel: read sa_daily_panel.parquet (hotspots + weather)] --> B[2. Generate target: compute hotspots_next, derive target_next_day (10), drop residual NA rows]; B --> C[3. Merge NDVI: left-join MODIS_NDVI_daily_interp.csv, fill gaps by regional median]; C --> D[4. Feature engineering: compute VPD, DTR, API, FFDI, and interaction terms]; D --> E[5. Save final feature panel to panel_features_SA.parquet];
```

2. Generate target: compute `hotspots_next`, derive `target_next_day` (10), drop residual NA rows

3. Merge NDVI: left-join  
`MODIS_NDVI_daily_interp.csv`,  
fill gaps by regional median

4. Feature engineering: compute VPD,  
DTR, API, FFDI, and interaction terms

5. Save final feature panel to  
`panel_features_SA.parquet`