

## Supplemental Results

This section provides additional examples and extended analysis supporting the main experimental results. The examples demonstrate how the quadrant structure applies to diverse domains, showing the generality and practical utility of the meta-pragmatic and meta-epistemic framework.

### Extended Quadrant Examples

#### Quadrant 1: Advanced Sensory Processing

##### **Example: Visual Scene Recognition**

**States:** {indoor\_scene, outdoor\_scene, urban\_scene, natural\_scene} **Observations:** {geometric\_patterns, organic\_patterns, human\_made\_objects, natural\_elements}

**Actions:** {foveate\_center, pan\_left, pan\_right, zoom\_in, zoom\_out}

##### **Generative Model:**

$$A = \begin{pmatrix} 0.8 & 0.1 & 0.9 & 0.2 \\ 0.1 & 0.8 & 0.05 & 0.7 \\ 0.25 & 0.25 & 0.22 & 0.25 \end{pmatrix}$$