**Supplementary Material**



Figure S1. Average feature maps for grid cells across images.



Figure S2. Matrix of pairwise scatter plots given the image features considered in the study. Panels above the diagonal plot the actual data points, which are mean feature values for a given scene and analysis grid cell (135 scenes × 48 grid cells = 6480 data points in each panel). Hexagonal binning was used to avoid overplotting; the *x*-*y* plane is tiled using hexagons which are then colored to indicate the number of points that fall inside[1](#_ENREF_1); darker colors indicate a larger number of data points. Each feature combination additionally shows a regression line (in green) and a polynomial spline (red) that were fit to the data. Panels below the diagonal display the linear correlation coefficients (scaled according to their absolute size) and corresponding *p*-values. The diagonal panels show the distributions of feature values.

Table S1. Generalized linear mixed models fitting fixation probability for a scene memorization task for a fine 16 × 12 grid and a coarse 4 × 3 grid: Means, standard errors, and *z*-values of fixed effects on fixation probability; variances of the random effects.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Fixed effects | | | Random effects, Variance | |
| Predictor | *b* | SE | *z* | by-items | by-subjects |
|  | Fine 16 × 12 grid | | | | |
| Intercept | -2.572 | 0.041 | -62.58 | 0.162 | 0.028 |
| Luminance, quadratic | **-0.020** | **0.021** | **-0.97** | 0.054 | – |
| Luminance contrast | **-0.037** | **0.033** | **-1.12** | 0.136 | – |
| Edge density | 0.421 | 0.038 | 11.15 | 0.172 | – |
| Clutter | 0.171 | 0.032 | 5.37 | 0.127 | – |
| Number of segments | 0.299 | 0.029 | 10.25 | 0.106 | – |
| Central bias | -0.475 | 0.025 | -19.36 | 0.034 | 0.023 |
|  | Coarse 4 × 3 grid | | | | |
| Intercept | 0.865 | 0.116 | 7.47 | 1.25 | 0.11 |
| Luminance, quadratic | **-0.053** | **0.064** | **-0.83** | 0.43 | – |
| Luminance contrast | **0.144** | **0.106** | **1.36** | 1.24 | – |
| Edge density | 0.366 | 0.150 | 2.45 | 2.45 | – |
| Clutter | 0.459 | 0.112 | 4.11 | 1.28 | – |
| Number of segments | 0.503 | 0.109 | 4.62 | 1.26 | – |
| Central bias | -0.503 | 0.049 | -10.34 | 0.20 | 0.03 |

*Note*. Non-significant coefficients are set in bold (|*z*| < 1.96, *p* > .05).

1. Carr, D. B.*, et al.* 1987. Scatterplot matrix techniques for large N. *J. Am. Stat. Assoc.* **82**: 424-436.