Appendix A

The Images used in the Evaluation Process:

Figure A.1 (left to right, top to bottom), Lena Image coded using JPEG, at quality factor = 1, and the edge, texture, smooth and combined component images for the coded image were extracted. In all cases the Original Lena Image is shown to the left (as presented to the subjects). The extracted components are also used to calculate the RMSE, between the Original Image and each component, in the objective evaluation.

Figure A.2 The same Component images as in Figure A.1 for Lena Image coded using JPEG with quality factor = 2.
Figure A.3 The same Component images as in Figure A.1 for Lena Image coded using JPEG with quality factor = 5.

Figure A.4 The same Component images as in Figure A.1 for Lena Image coded using JPEG with quality factor = 10.
Figure A.5 The same Component images as in Figure A.1 for Lena Image coded using JPEG with quality factor = 20.

Figure A.6 The same Component images as in Figure A.1 for Lena Image coded using JPEG with quality factor = 100 (Original Image).
Figure A.7 (left to right, top to bottom), Barbara Image coded using JPEG, at quality factor = 1, and the edge, texture, smooth and combined component images for the coded image were extracted. In all cases the Original Barbara Image is shown to the left (as presented to the subjects). The extracted components are also used to calculate the RMSE, between the Original Image and each component, in the objective evaluation.

Figure A.8 The same Component images as in Figure A.7 for Barbara Image coded using JPEG with quality factor = 2.
Figure A.9 The same Component images as in Figure A.7 for Barbara Image coded using JPEG with quality factor = 5.

Figure A.10 The same Component images as in Figure A.7 for Barbara Image coded using JPEG with quality factor = 10.
Figure A.11 The same Component images as in Figure 7.1 for Barbara Image coded using JPEG with quality factor = 20.

Figure A.12 The same Component images as in Figure 7.1 for Barbara Image coded using JPEG with quality factor = 100 (Original Image).
Figure A.13 (left to right, top to bottom), Goldhills Image coded using JPEG, at quality factor $= 1$, and the edge, texture, smooth and combined component images of the coded image were extracted. In all cases the Original Goldhills Image is shown to the left (as presented to the subjects). The extracted components are also used to calculate the RMSE, between the Original Image and each component, in the objective evaluation.

Figure A.14 The same Component images as in Figure A.13 for Goldhills Image coded using JPEG with quality factor $= 2$. 

Figure A.15 The same Component images as in Figure A.13 for Goldhills Image coded using JPEG with quality factor = 5.

Figure A.16 The same Component images as in Figure A.13 for Goldhills Image coded using JPEG with quality factor = 10.
Figure A.17 The same Component images as in Figure A.13 for Goldhills Image coded using JPEG with quality factor = 20.

Figure A.18 The same Component images as in Figure A.13 for Goldhills Image coded using JPEG with quality factor = 100 (Original Image).
Appendix B

Objective Data Graphs for Barbara and Goldhills Images:

Figure B.1 (left to right, top to bottom), QF vs. RMSE between the Original Barbara image and: the coded images coded at different quality factors using JPEG, the smooth component images extracted from the coded images, the edge component images extracted from the coded images, the texture component images extracted from the coded images and the combined images obtained by adding the three components respectively. (The respective data is in Table 5.2).
Figure B.2 (left to right, top to bottom), QF vs. RMSE between the Original Goldhills image and: the coded images coded at different quality factors using JPEG, the smooth component images extracted from the coded images, the edge component images extracted from the coded images, the texture component images extracted from the coded images and the combined images obtained by adding the three components respectively. (The respective data is in Table 5.3).
### Appendix C

**Subjective Data:**

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Table C.1 The evaluation of the edge component images for the Barbara image coded at various QF. (The evaluation is with respect to question 1).
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Table C.2 The evaluation of the texture component images for the Barbara image coded at various QF. (The evaluation is with respect to question 1).
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Table C.4 The evaluation of the combined images for the Barbara image coded at various QF. (The evaluation is with respect to question 1).
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Table C.5 The evaluation of the edge component images for the Barbara image coded at various QF. (The evaluation is with respect to question 2).
### Table C.6 The evaluation of the texture component images for the Barbara image coded at various QF. (The evaluation is with respect to question 2).

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| STD     | 1.94  | 1.8185| 1.9466| 1.93334| 2.219 |

Table C.8 The evaluation of the combined images for the Barbara image coded at various QF. (The evaluation is with respect to question 2).
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Table C.9 The evaluation of the edge component images for the Barbara image coded at various QF. (The evaluation is with respect to question 3).
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Table C.10 The evaluation of the texture component images for the Barbara image coded at various QF. (The evaluation is with respect to question 3).
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| STDV      | 2.5256| 2.0987| 2.0946| 1.81712| 1.90209| 1.8474  |

Table C.11 The evaluation of the smooth component images for the Barbara image coded at various QF. (The evaluation is with respect to question 3).
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| averag e | 2.35 | 3.025 | 3.4 | 4.1 | 4.6 |
| STD      | 2.007 | 1.9147 | 1.9585 | 1.94541 | 1.9716 |

Table C.12 The evaluation of the combined images for the Barbara image coded at various QF. (The evaluation is with respect to question 3).
Figure C.1 (left to right, top to bottom), Average Rating vs. QF, between the Original Barbara image and: edge component images, texture component images, smooth component images and the combined images (obtained from the coded images at various QF using JPEG), respectively (the respective data is in Tables C.1 through C.4). The evaluation is with respect to Question 1.

Figure C.2 Average Rating vs. QF between the Original Barbara image and the various component images as in Figure C.1 (with the same sequence). (the respective data is in Tables C.5 through C.8). The evaluation is with respect to Question 2.
Figure C.3 Average Rating vs. QF between the Original Barbara image and the various component images as in Figure C.1 (with the same sequence). (the respective data is in Tables C.9 through C.12). The evaluation is with respect to Question 3.
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Table C.13 The evaluation of the edge component images for the Goldhills image coded at various QF. The evaluation is with respect to question 1.
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Table C.14 The evaluation of the texture component images for the Goldhills image coded at various QF. The evaluation is with respect to question 1.
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Table C.15 The evaluation of the smooth component images for the Goldhills image coded at various QF. The evaluation is with respect to question 1.
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Table C.17 The evaluation of the edge component images for the Goldhills image coded at various QF. The evaluation is with respect to question 2.
Rating of the texture component images for Goldhills Image coded at various quality factors. (Q2)

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Table C.18 The evaluation of the texture component images for the Goldhills image coded at various QF. The evaluation is with respect to question 2.
Table C.19 The evaluation of the smooth component images for the Goldhills image coded at various QF. The evaluation is with respect to question 2.
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Table C.20 The evaluation of the combined images for the Goldhills image coded at various QF. The evaluation is with respect to question 2.
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| STDV    | 0.9167 | 1.4491 | 1.803  | 1.76577 | 2.09456| 2.42199 |

Table C.22 The evaluation of the texture component images for the Goldhills image coded at various QF. The evaluation is with respect to question 3.
Table C.23 The evaluation of the smooth component images for the Goldhills image coded at various QF. The evaluation is with respect to question 3.
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average: 2.45 2.675 3.25 3.675 4.45 4.825

STDV: 2.2977 1.7005 2.0096 1.9267 2.14775 2.03668

Table C.24 The evaluation of the combined images for the Goldhills image coded at various QF. The evaluation is with respect to question 3.
Figure C.4 (left to right, top to bottom), Average Rating vs. QF, between the Original Goldhills image and: edge component images, texture component images, smooth component images and the combined images (obtained from the coded images at various QF using JPEG), respectively (the respective data is in Tables: C.13 through C.16). The evaluation is with respect to Question 1.

Figure C.5 Average Rating vs. QF between the Original Goldhills image and the various component images as in Figure C.4 (with the same sequence). (the respective data is in Tables C.17 through C.20). The evaluation is with respect to Question 2.
Figure C.6 Average Rating vs. QF between the Original Goldhills image and the various component images as in Figure C.4 (with the same sequence). (the respective data is in Tables C.21 through C.24). The evaluation is with respect to Question 3.