Deeb Armaly
ECE 4310
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Lab5 Report

Below is the normalized sobel image of the hawk used for calculating the external energy:

Below is the image with the original contour points on the left and the final image on the right:

This was achieved through using 4 iterations, a window size of 49, as well as weighing the first internal energy term with a value of 100, the second energy term with a value of 24, and the external energy with a value of 17. Using more iterations caused the contour to collapse into the hawk and weighing it differently caused the contour to become deformed and/ or the points getting too close. If the second internal energy term was given more weight then the left side of the hawk would not be detected well and if the external energy term was given more weight then the points would become unevenly spaced. This weighting proved to be optimal for my code in order to get as close to the hawk as possible without it going into the hawk and without the

points overlapping each other. Below are the final contour points output as seen in the text file that is an output of the program.

259 85
269 90
270 104
274 112
277 119
275 135
276 143
277 152
275 167
273 182
267 192
267 203
264 216
255 223
246 234
236 239
232 248
223 257
219 265
209 266
199 264
188 267
178 255
174 245
168 235
167 224
164 216
170 208
172 196
173 184
176 175
180 160
183 148
189 137
194 122
199 110
205 99
216 87
225 80
234 74
245 73
249 79