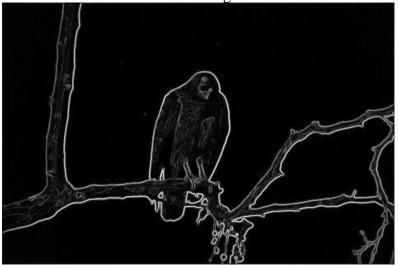
Deeb Armaly ECE 4310 Fall 2022 Lab5 Report

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