COLLEGE OF ENGINEERING AND COMPUTER SCIENCE
FLORIDA ATLANTIC UNIVERSITY

Announces the Ph.D. Dissertation Defense of

Arash Golchubian

for the degree of Doctor of Philosophy (Ph.D.)

"Image Quality and Beauty Detection Using Deep Learning"

July 29, 2022, 12:00 PM
Engineering East, Room 503
777 Glades Road
Boca Raton, FL
Zoom Meeting
Meeting ID: 834 4174 8812
Passcode: 52rAvF

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DEPARTMENT:
Electrical Engineering and Computer Science

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ABSTRACT OF DISSERTATION
Image Quality and Beauty Detection Using Deep Learning
The field of computer vision has grown by leaps and bounds in the past decade. The rapid advances can be largely attributed to advances made in the field of Artificial Neural Networks and more specifically can be attributed to the rapid advancement of Convolutional Neural Networks (CNN) and Deep Learning. One area that is of great interest to the research community at large is the ability to detect the quality of images in the sense of technical parameters such as blurriness, encoding artifacts, saturation, and lighting, as well as for its' aesthetic appeal. The purpose of such a mechanism could be detecting and discarding noisy, blurry, dark, or over exposed images, as well as detecting images that would be considered beautiful by a majority of viewers. In this dissertation, the detection of various quality and aesthetic aspects of an image using CNNs is explored. This research produced two datasets that are manually labeled for quality issues such as blur, poor lighting, and digital noise, and for their aesthetic qualities, and Convolutional Neural Networks were designed and trained using these datasets. Lastly, two case studies were performed to show the real-world impact of this research to traffic sign detection and medical image diagnosis.

BIOGRAPHICAL SKETCH
Born in Tehran, Iran
B.S., Florida Atlantic University, Boca Raton, FL, 2016
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CONCERNING PERIOD OF PREPARATION
& QUALIFYING EXAMINATION

Time in Preparation: 2020 - 2022

Qualifying Examination Passed: Fall 2019

Published Papers:

Golchubian A., Marques O. and Nojoumian M. Photo Quality Classification Using Deep Learning. Multimedia Tools and Applications (MTAP), Springer, vol 80, pp. 22193-22208, 2021. https://doi.org/10.1007/s11042-021-10766-7

Golchubian A., Davis M., Nojoumian M., and Furht B. Aesthetic photo ranking using Deep Learning. Multimedia Tools and Applications (MTAP), Under submission, 2022.

Golchubian A., Marques O., Nojoumian M., and Davis M. Improving medical diagnosis classification accuracy through deep learning detection of poor quality images. Under preparation, 2022.