IN002-EC-TUB

Standing on the Shoulders of Giants: State-of-the-Art Deep-Learning Super-Resolution Imaging for Radiology

Tuesday, Nov. 28 12:45PM - 1:15PM Room: IN Community, Learning Center Custom Application Computer Demonstration

Awards
Certificate of Merit

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TEACHING POINTS

The teaching points of this exhibit are to (1) review the requirements of image resolution in various medical image modalities, (2) illustrate the principles of super-resolution techniques, and (3) demonstrate how SR provides improvement of image quality in medical images.

TABLE OF CONTENTS/OUTLINE

INTRODUCTION: Super-Resolution (SR) technique is one of image processing methods for estimating a high-resolution image from a low-resolution one. There are a lot of opportunity to magnify medical images, however, commonly used magnification methods often generate some artifacts including blurriness, jaggedness or ringing. Recently, state-of-the-art SR scheme appeared using deep convolutional neural networks that enables online-clinical application of SR scheme. DEEP-LEARNING SUPER-RESOLUTION IN ACTION: Showcase examples of deep-learning SR results in medical imaging. 1. Chest radiography 2. Mammography 3. CT 4. MRI