Convolutional neural networks based robust Denoising of Low-Dose Computed Tomography Perfusion maps

**Matlab Codes\* :** (requires [MatConvNet](http://www.google.com/url?q=http%3A%2F%2Fwww.vlfeat.org%2Fmatconvnet%2F&sa=D&sntz=1&usg=AFQjCNHqpKEHsN2IRnv0sxd8ASiB7Cle_g) )

**Data:** Training data is generated using the tool [digital-brain-perfusion-phantom](https://www.google.com/url?q=https%3A%2F%2Fwww5.cs.fau.de%2Fresearch%2Fdata%2Fdigital-brain-perfusion-phantom%2F&sa=D&sntz=1&usg=AFQjCNEGzAU-za_gorLT7OwIdxtmm21JWA)

#Matlab code for generating the network architecture.

#Matlab code for Testing the trained network for Phantom data.

#Matlab codes for [Online SPD (Comparision codes and preprocessing codes)](http://www.google.com/url?q=http%3A%2F%2Fchenlab.ece.cornell.edu%2Fpeople%2Fruogu%2Frobust_ctp.html&sa=D&sntz=1&usg=AFQjCNGz4z7ysn22DwfeqOv1djgRDmBRlQ)

#Matlab codes for [BM3D](http://www.google.com/url?q=http%3A%2F%2Fwww.cs.tut.fi%2F~foi%2FGCF-BM3D%2F&sa=D&sntz=1&usg=AFQjCNFQAXVhSoaz7BYocFXKKniscsjyDg)

Models for both temporal and map denoising can be accessed here: [Link](https://drive.google.com/open?id=1UQ2kMnnZzYzW9yPd7GcHdZMny3DKgsyw)

Venkata S. Kadimesetty, Sreedevi Gutta, Sriram Ganapathy, and Phaneendra K. Yalavarthy *Convolutional Neural Network based RobustDenoising of Low-Dose Computed Tomography Perfusion Maps,Accepted in IEEE TRPMS* [PDF](https://drive.google.com/file/d/1EsNUBZ6by9W2AWCcnHSr_9CIPml_o9KU/view?usp=sharing)

This Matlab code is used as part of the work presented in:

"Convolutional neural networks based robust Denoising of Low-Dose Computed Tomography Perfusion maps" Submitted to IEEE TRPMS

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