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Camille Moyer* (cmmoyer1@asu.edu), **Hannes Baukmann** and **Tim Conrad**. *Synthetic data augmentation with DCGANs for better diagnoses of osteoarthritis.*

In the medical world, viable data is difficult to come by, particularly when it comes to healthy patients. Osteoarthritis is one of the most common causes of disability in adults, but it is still difficult to obtain enough data to train machine learning processes. In this talk, we explore the use of deep convolutional generative adversarial networks (DCGAN) to supplement the low amount of data for healthy patients. We use tandem mass spectrometry data in the form of heat maps to train the DCGAN and produce more images that can later be used in classification networks for diagnostic purposes. The use of DCGANs to construct more image data is promising in its ability to incorporate the natural variability found in biological systems. (Received September 17, 2019)