Adaptive Variational Memory Encoding for Recurrent Data Synthesis

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This work proposes a generative architecture that incorporates a natural approach to data synthesis. The Adaptive Variational Memory Encoding (AVME) model learns to represent data in an iterative manner during training, allowing for adaptive generation when sampling new data. One-shot approaches to data synthesis lack recurrent communication between dependencies during generation; this work attempts to lessen the likelihood of incoherent samples by giving the model time to iteratively update its output. Such a mechanism is largely inspired by the adaptive capabilities of the human mind for continuous predictive insight, resulting in a statistical model entwined with natural techniques. The AVME model is applied to both classical and conditional image generation, and shown to be effective at both tasks, achieving state of the art results on the MNIST dataset.

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