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Generative Deep Learning

Generative AI is the hottest topic in tech. This practical book teaches machine learning engineers and data scientists how to use TensorFlow and Keras to create impressive generative deep learning models from scratch, including variational autoencoders (VAEs), generative adversarial networks (GANs), Transformers, normalizing flows, energy-based models, and denoising diffusion models.

The book starts with the basics of deep learning and progresses to cutting-edge architectures. Through tips and tricks, you'll understand how to make your models learn more efficiently and become more creative.

- **Discover how VAEs can change facial expressions in photos**
- **Train GANs to generate images based on your own dataset**
- **Build diffusion models to produce new varieties of flowers**
- **Train your own GPT for text generation**
- **Learn how large language models like ChatGPT are trained**
- **Explore state-of-the-art architectures such as StyleGAN2 and ViT-VQGAN**
- **Compose polyphonic music using Transformers and MuseGAN**
- **Understand how generative world models can solve reinforcement learning tasks**
- **Dive into multimodal models such as DALL.E 2, Imagen, and Stable Diffusion**

This book also explores the future of generative AI and how individuals and companies can proactively begin to leverage this remarkable new technology to create competitive advantage.

"*Generative Deep Learning* is an accessible introduction to the deep learning toolkit for generative modeling. If you are a creative practitioner who loves to tinker with code and want to apply deep learning to your work, then this is the book for you."

—David Ha
Head of Strategy, Stability AI

"An excellent book that dives right into all of the major techniques behind state-of-the-art generative deep learning. An exciting exploration of one of the most fascinating domains in AI!"

—François Chollet
Creator of Keras

David Foster is the cofounder of Applied Data Science Partners.

AI / DEEP LEARNING

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