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Bio

BIO

I am a materials scientist by training with 30 years of experience investigating molecular-scale processes that control function, aging, and failure of complex materials and devices. Advance characterization methods that give insight into molecular processes have undergone a dramatic change over those 30 years with the advent of brighter sources (from X-rays synchrotrons and free-electron lasers to MeV accelerator-based electron sources), and faster and larger area detectors. The depth and the precision of insights have improved significantly but the amount of raw data has increased by orders of magnitude as well, making extraction of deep insights harder. Over the last decade, I have, therefore, focused on leveraging emerging machine learning and artificial intelligence techniques to not only accelerate knowledge extraction from complex, multi-dimensional, and noisy data but also make data collection smarter.