Isolated electronic spins associated with Nitrogen-Vacancy (NV) centers in diamond have been recently proposed as sensitive magnetic sensors. This novel approach to magnetometry is enabled by the good coherence properties of the NV centers, as well as by advanced techniques for their coherent control. Higher sensitivity, combining high spatial resolution with large field of view, can be obtained using ensemble of NV centers to image magnetic surfaces. The ultimate sensitivity limit is set by the interaction of the sensor spins with their environment and in particular the nuclear and electronic spin bath. Engineering, controlling or harnessing the environment can lead to better sensitivity. For example, NV-NV couplings that would limit the sensitivity could be used instead to create a squeezed state, yielding enhanced sensitivity. Squeezing can only be achieved by using coherent control to engineer the desired Hamiltonian, while protecting the system from decoherence. Finally, I will outline exciting applications enabled by the improved sensitivity in areas ranging from materials science to biophysics.