EEG signals are inherently noisy due to various artifacts such as muscle activity, eye movements, and environmental interference. Denoising techniques aim to isolate neural activity from these contaminating sources to improve signal quality for downstream analysis. Traditional methods like bandpass filtering and Independent Component Analysis (ICA) have been widely used, but often fail when artifact sources overlap in frequency or spatially. More recent approaches leverage adaptive filters such as the Recursive Least Squares (RLS) algorithm or data-driven models like convolutional neural networks (CNNs) and U-Nets to capture temporal and spatial dependencies. Effective denoising not only enhances brain-computer interface (BCI) performance but also increases the reliability of clinical interpretations in EEG-based diagnosis.