We will talk about a zero curvature formulation to integrable Hamiltonian equations associated with matrix loop algebras, both semisimple and non-semisimple. Hamiltonian structures and Liouville integrability will be established by either the trace identity or the variational identity. The two real three dimensional Lie algebras, $\text{sl}(2,\mathbb{R})$ and $\text{so}(3,\mathbb{R})$, will be used to show illustrative examples of integrable Hamiltonian equations. (Received August 22, 2016)