$$In[\circ] := H_{int} = -\hbar \frac{\delta}{2}$$
 PauliMatrix[3] + $\hbar \frac{\Omega}{2}$ PauliMatrix[1]; Grid[Insert[Transpose[{Eigenvalues[H_{int}], Normalize /@ Eigenvectors[H_{int}]}], Market [Hardet] [Ha

$$\begin{array}{c|c} \textbf{Eigenvalue} & \textbf{Eigenvector} \\ \hline -\frac{1}{2}\,\sqrt{\delta^2+\Omega^2}\,\,\hbar\,\,\left\{-\frac{\delta_+\sqrt{\delta^2+\Omega^2}}{\Omega}\,,\,\,\frac{1}{\sqrt{1+\mathsf{Abs}\big[\frac{\delta_+\sqrt{\delta^2+\Omega^2}}{\Omega}\big]^2}}\,,\,\,\frac{1}{\sqrt{1+\mathsf{Abs}\big[\frac{\delta_+\sqrt{\delta^2+\Omega^2}}{\Omega}\big]^2}}\right\} \\ \hline \frac{1}{2}\,\sqrt{\delta^2+\Omega^2}\,\,\hbar\,\,\left\{-\frac{\delta_-\sqrt{\delta^2+\Omega^2}}{\sqrt{1+\mathsf{Abs}\big[\frac{\delta_-\sqrt{\delta^2+\Omega^2}}{\Omega}\big]^2}}\,,\,\,\frac{1}{\sqrt{1+\mathsf{Abs}\big[\frac{\delta_-\sqrt{\delta^2+\Omega^2}}{\Omega}\big]^2}}\right\} \\ \hline \frac{1}{2}\,\sqrt{\delta^2+\Omega^2}\,\,\hbar\,\,\left\{-\frac{\delta_-\sqrt{\delta^2+\Omega^2}}{\sqrt{1+\mathsf{Abs}\big[\frac{\delta_-\sqrt{\delta^2+\Omega^2}}{\Omega}\big]^2}}\,,\,\,\frac{1}{\sqrt{1+\mathsf{Abs}\big[\frac{\delta_-\sqrt{\delta^2+\Omega^2}}{\Omega}\big]^2}}\right\} \end{array}$$