Figure II.14: The vector $\mathbf{v}$ being rotated around $\mathbf{u}$. The vector $\mathbf{v}_1$ is $\mathbf{v}$’s projection onto $\mathbf{u}$. The vector $\mathbf{v}_2$ is the component of $\mathbf{v}$ orthogonal to $\mathbf{u}$. The vector $\mathbf{v}_3$ is $\mathbf{v}_2$ rotated $90^\circ$ around $\mathbf{u}$. The dashed line segments in the figure all meet at right angles.