



Figure VII.5: The de Casteljau method for computing $\mathbf{q}(u)$ for \mathbf{q} a degree three Bézier curve is the basis for finding the new points needed for recursive subdivision. Shown here is the $u = 1/2$ case. The points $\mathbf{p}_0, \mathbf{r}_0, \mathbf{s}_0, \mathbf{t}_0$ are the control points for the Bézier curve $\mathbf{q}_1(u)$ which is equal to the first half of the curve $\mathbf{q}(u)$, i.e., starting at \mathbf{p}_0 and ending at \mathbf{t}_0 . The points $\mathbf{t}_0, \mathbf{s}_1, \mathbf{r}_2, \mathbf{p}_3$ are the control points for the curve $\mathbf{q}_2(u)$ equal to the second half of $\mathbf{q}(u)$, i.e., starting at \mathbf{t}_0 and ending at \mathbf{p}_3 .