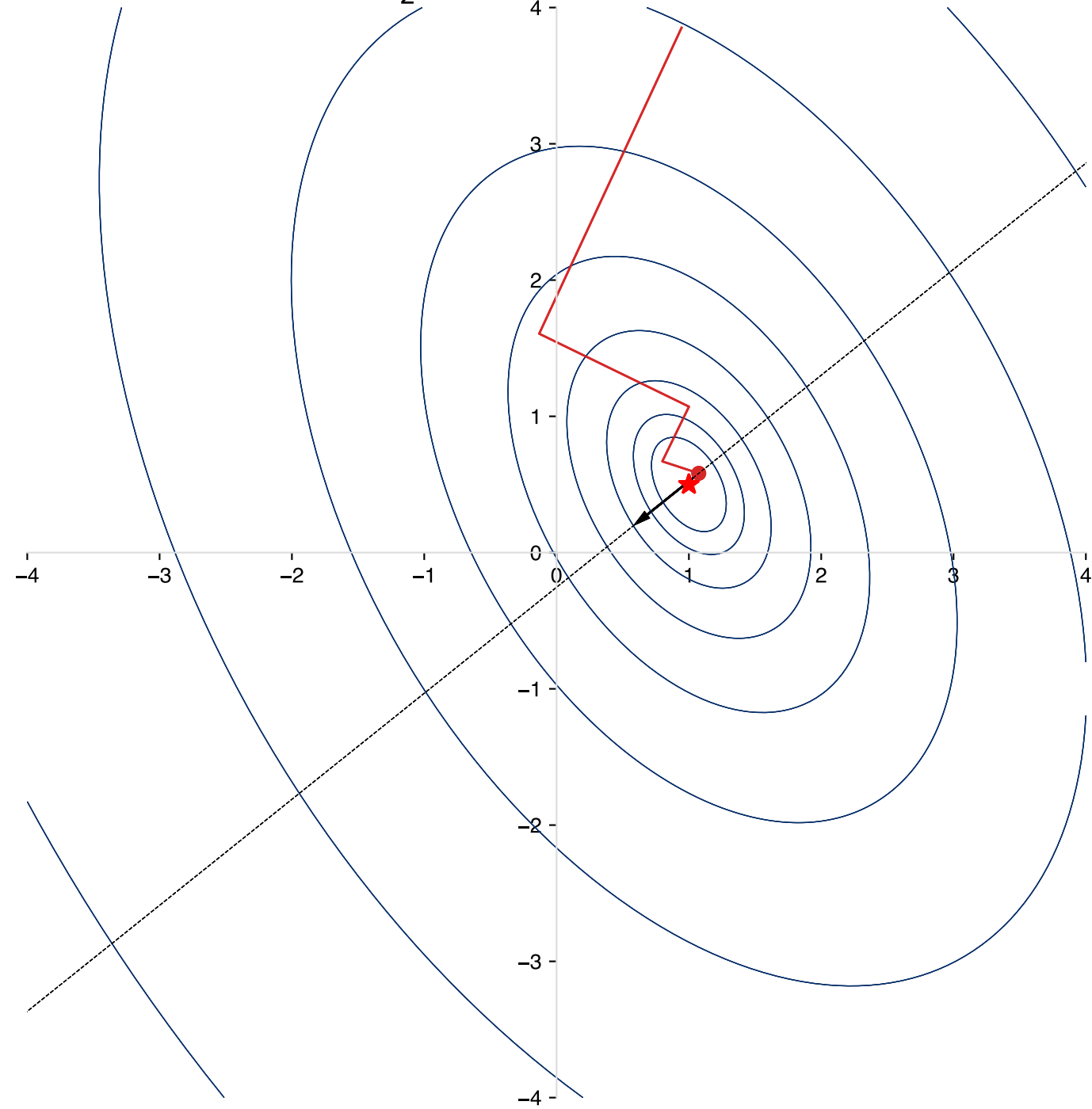$$f(\mathbf{x}) = \tfrac{1}{2}(\mathbf{x} - \mathbf{x}^*)^\top \mathbf{Q}(\mathbf{x} - -\mathbf{x}^*)$$

Gradient Descent: Backtracking

Iteration $k = 0$

Step size $\alpha_0 = 0.636$

$$f(\mathbf{x} + t\mathbf{d})$$