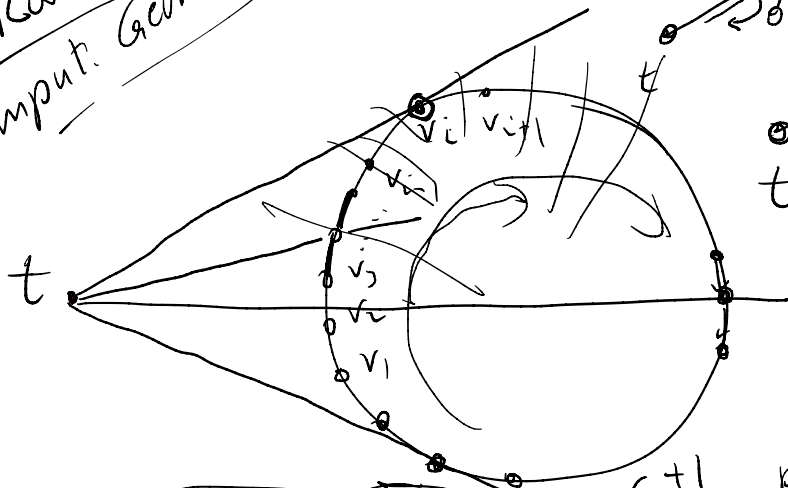
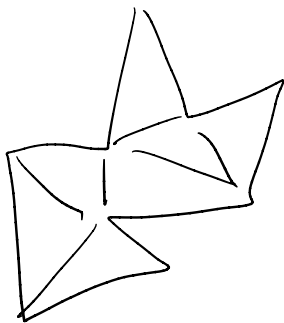
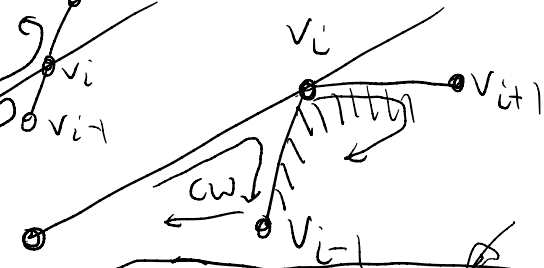
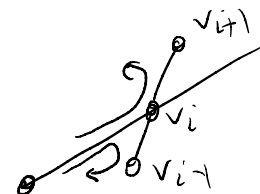
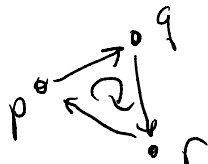
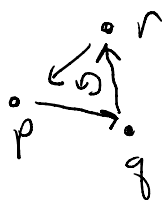
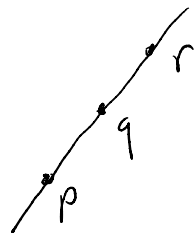


CGAL

O'Rourke
Comput. Geom. in C



$$\text{orient}(p, q, r) = \begin{cases} +1 & \overrightarrow{p \rightarrow q \rightarrow r} \text{ CCW} \\ -1 & \overrightarrow{p \rightarrow q \rightarrow r} \text{ CW} \\ 0 & \text{o.w.} \end{cases}$$



$$\text{or}(t, v_i, v_{i-1}) = \text{or}(t, v_i, v_{i+1}) = -1$$

$$\text{sign det} \begin{pmatrix} 1 & p_x & p_y \\ 1 & q_x & q_y \\ 1 & r_x & r_y \end{pmatrix}$$