At the point (a, a^2), the slope of the tangent line to $y = x^2$ is $2a$, so the perpendicular line has a slope of $-1/2a$.

So the equation of this line is

$$y = -1/2ax + b$$

for a value of b to determine.

Since the line goes through (a, a^2) we have:

$$a^2 = -1/2a \cdot a + b$$

so

$$a^2 = -1/2a^2 + b$$

and

$$b = a^2 + 1/2a^2 = 3/2a^2$$

So the equation of the line is

$$y = -1/2ax + 3/2a^2$$