

Source manifold M

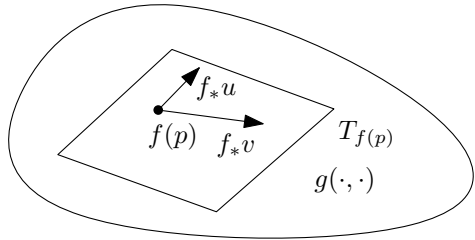
Immersion $f : M \rightarrow N$

$$(f^* g)_p(u, v) = g_{f(p)}(f_* u, f_* v)$$

pushforward $f_* = df$

$$f_* u = \text{Jac } u$$

When $g = g_{\text{Euc}}$, $(g^* f) = \text{Jac}^\top \text{Jac}$



Target Riemannian manifold (N, g)