

Compress touch. Predict slip.
Regulate grip.



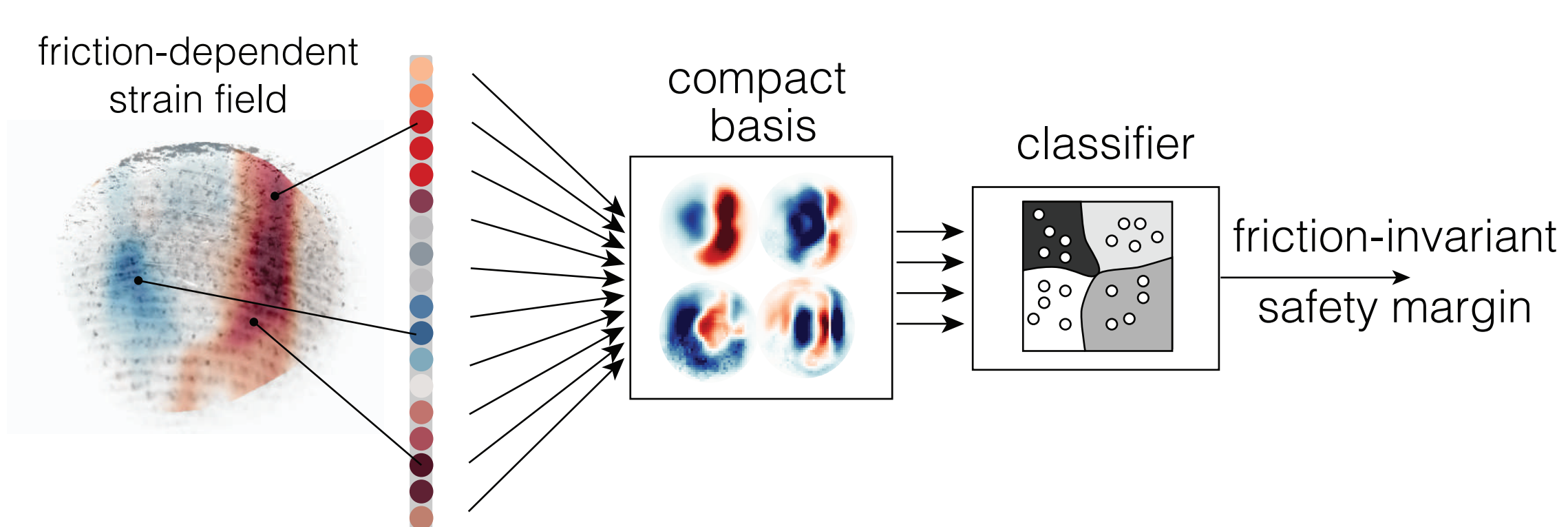
Video!



Contact us

1. Background

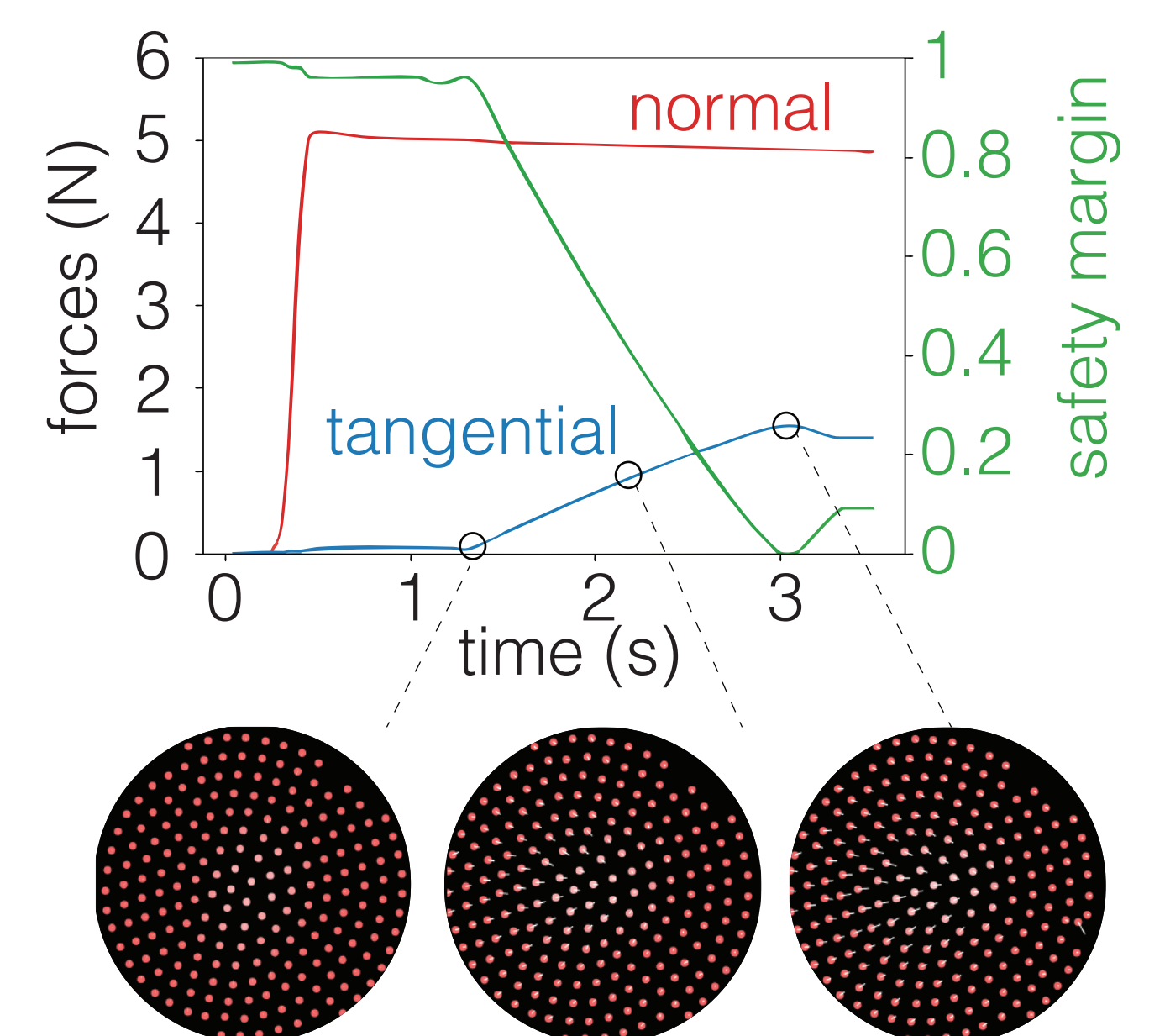
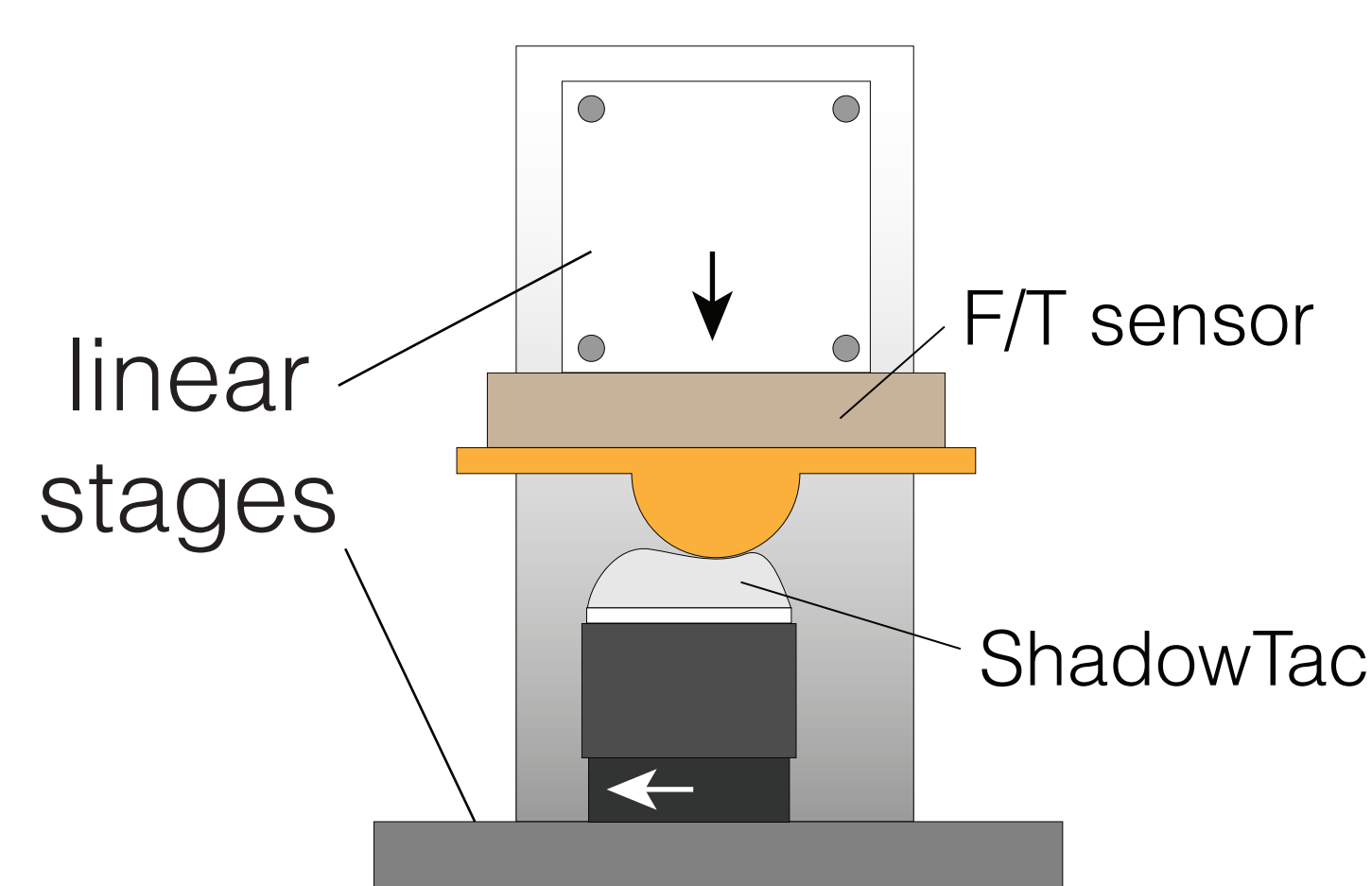
Robotic slip estimators are high-dimensional and contact dependent.



Humans compress touch into spatial pattern for quick and invariant computations.

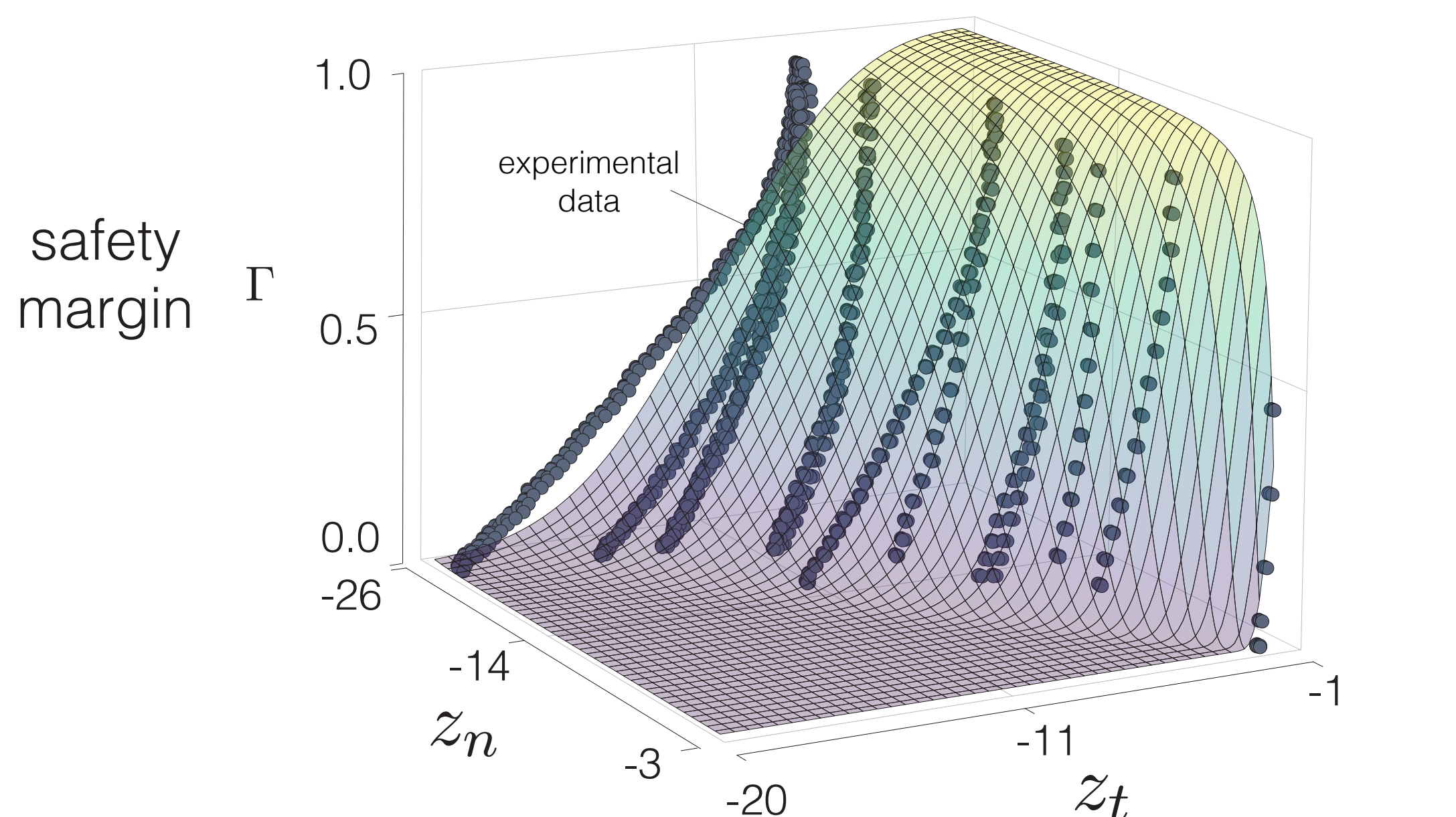
2. Data collection

We collected dense measurements of normal and tangential membrane deformations under different forces and shape conditions.



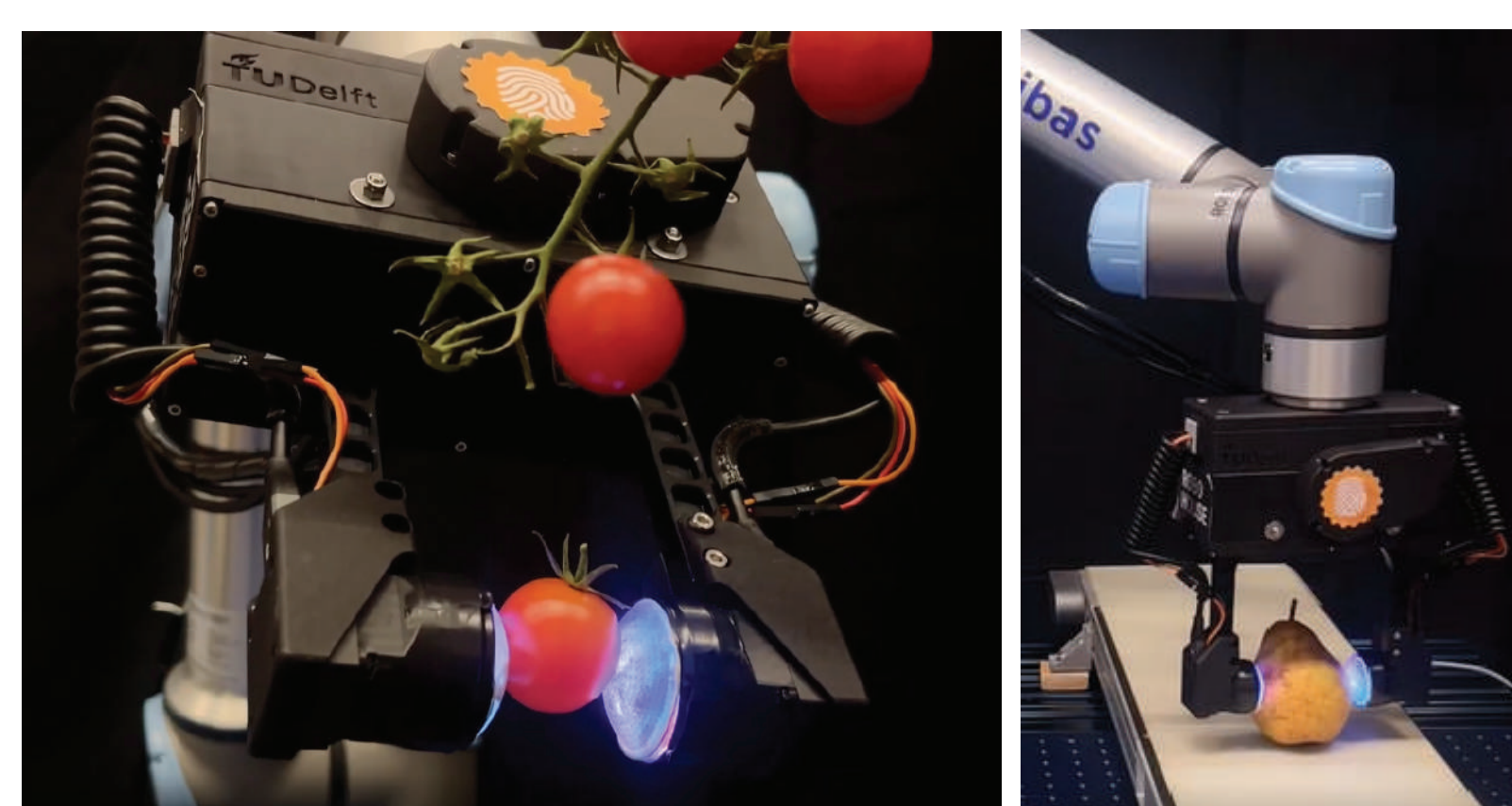
3. Latent structure of slip

The latent space was obtained with a Singular Value Decomposition.



$$\Gamma(z_t, z_n) = 0.005134 \left(\frac{z_t}{z_n + 1.1316} \right)^3$$

4. Grip force regulation



The controller adapts the grip force to maintain a safety margin of 0.7 and gently grasp delicate objects in dynamic environments.

