



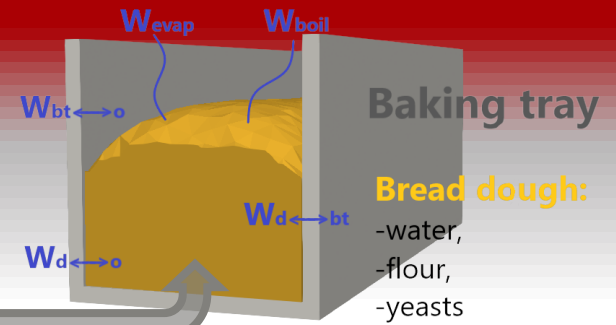
UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Three Minute Thesis Competition

Auditorium, Orto Botanico (PD), 20th March 2024



Digital Twin of Bread Baking to Avoid Energy Waste



Differential Equations

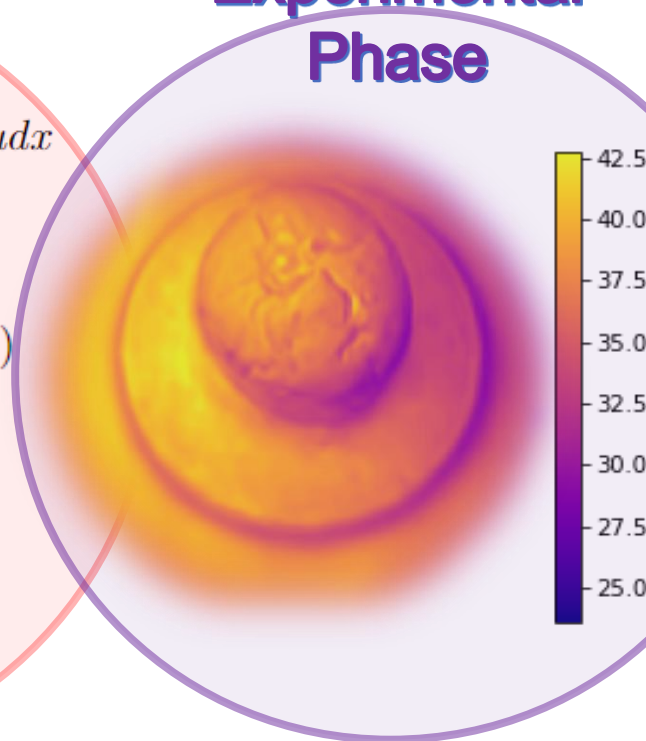
$$\mathcal{E}(u) = \int_{\Omega_b} \psi(u) dx - \int_{\Omega_b} B \cdot u dx$$

$$\delta \mathcal{E}(u) = 0$$

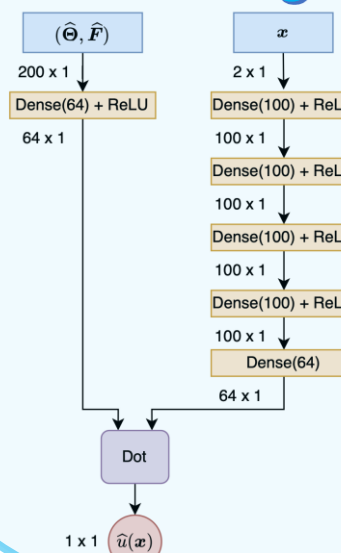
$$\rho_b c_b J \frac{\partial \theta_b}{\partial t} = \text{div}(\beta_b J C^{-1} \nabla \theta_b)$$

$$\begin{cases} \frac{d}{dt} Y = K_y(\theta) Y \\ Y(0) = Y_0 \end{cases}$$

Experimental Phase



Machine Learning



Embedded Microprocessor

