## **Dataset Curation**











## Continuous Filtering and Quantum Physics

Action term is interpreted as integration of

$$\begin{aligned} \bullet & \text{ Action term is interpreted as integration of} \\ & \text{ Lagrangian} \\ & \tilde{P}(t,x|t_0,x_0) = \int_{x(t_0)=x_0}^{x(t)=x} [\mathcal{D}x(t)] \exp\left(-\frac{1}{h_v}S\right) \\ & S = \frac{1}{2} \int_{t_0}^t dt \left[ \sum_{i=1}^n [\dot{x}_i^2(t) + f_i^2(x) - 2\dot{x}_i(t)f_i(x(t))] + h_v \sum_{i=1}^n \frac{\partial f_i(x(t))}{\partial x_i} + \frac{h_v}{h_w} \sum_{i=1}^m h_i^2(x(t)) \right] \\ & = \frac{1}{2} \int_{t_0}^t dt \left[ \sum_{i=1}^n [\dot{x}_i^2(t) + f_i^2(x)] + h_v \sum_{i=1}^n \frac{\partial f_i(x(t))}{\partial x_i} + \frac{h_v}{h_w} \sum_{i=1}^m h_i^2(x(t)) \right] \\ & - \sum_{i=1}^n \int_{x(t_0)}^{x(t)} dx_i(t)f_i(x(t)) \\ & = \frac{1}{2} \int_{t_0}^t dt \mathcal{L} - \sum_{i=1}^n \int_{x(t_0)}^{x(t)} dx_i(t)f_i(x(t)) \\ & - V = \frac{1}{2} \int_{t_0}^t dt \left[ \sum_{i=1}^n \left[ f_i^2(x) + h_v \frac{\partial f_i(x(t))}{\partial x_i} \right] + \frac{h_v}{h_w} \sum_{i=1}^m h_i^2(x(t)) \right] \end{aligned}$$



