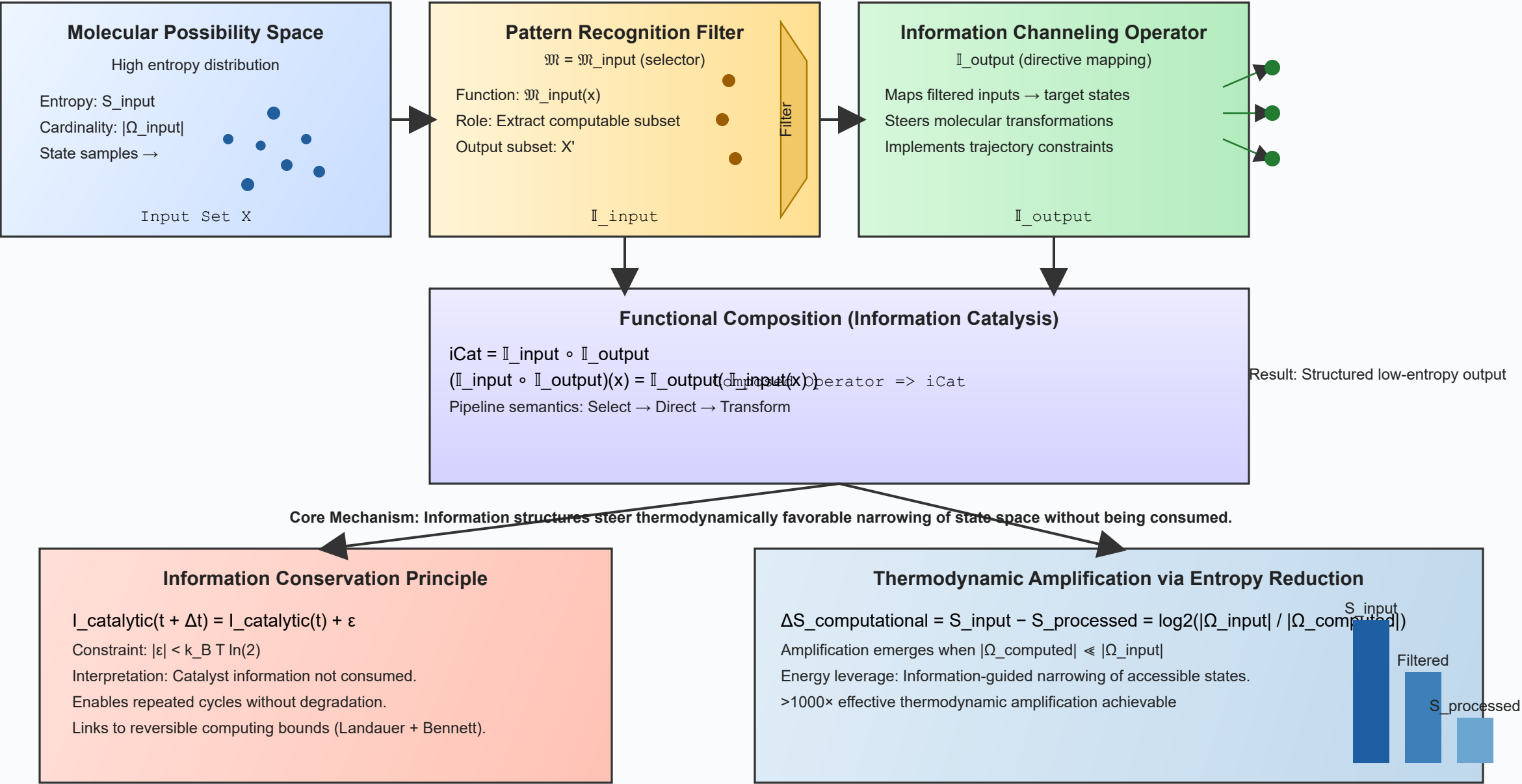


Information Catalysis: Theoretical Framework

Biological Maxwell Demon (BMD) Mechanism within Borgia Framework



Legend: $\mathcal{L}_{\text{input}}$ = selection (pattern recognition) $\mathcal{L}_{\text{output}}$ = directed transformation channel $i\text{Cat}$ = composed catalytic information operator ΔS reduction \Rightarrow amplification
Catalyst persistence: $|\epsilon|$ below Landauer bound ensures reusability