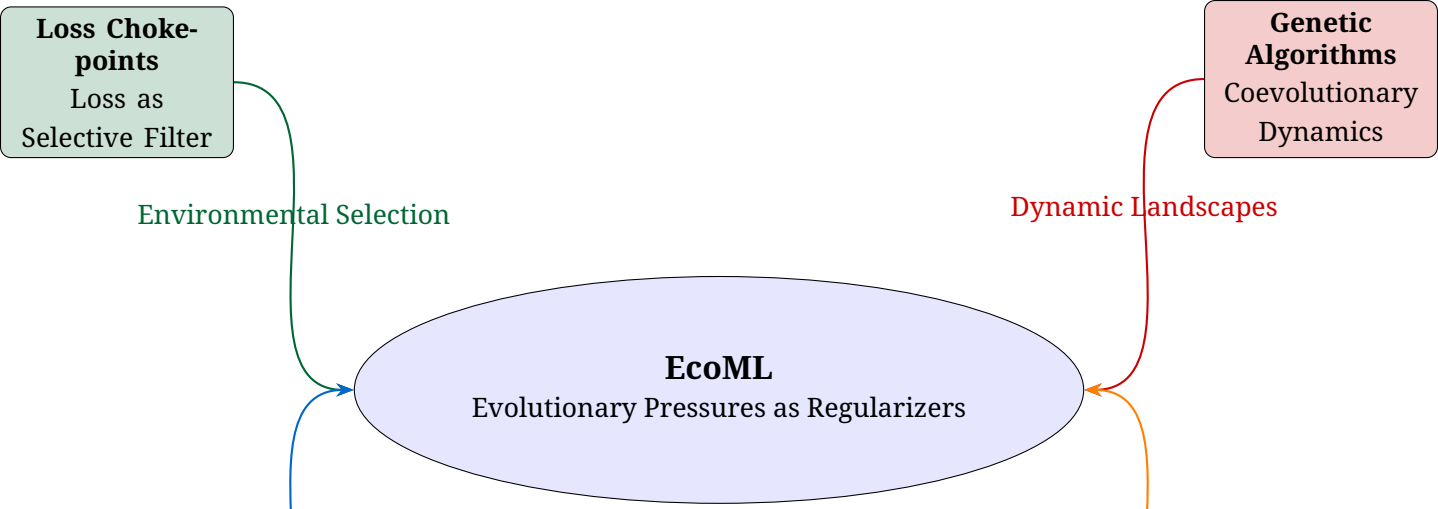

EcoML as a Synthesis of Evolutionary Theories: EcoML integrates prior frameworks—loss functions as chokepoints, genetic algorithms with coevolution, symbolic regression for compression, and recursive cognitive systems—into a bio-inspired machine learning paradigm. Evolutionary pressures (resource competition, environmental change, predator-prey dynamics) act as implicit regularizers, fostering emergent sparsity, robustness, and self-regulation, aligning with the ethos that intelligence is grown under constraint.