

Splinooids: First steps out of EDEnS

Kevin GODIN-DUBOIS

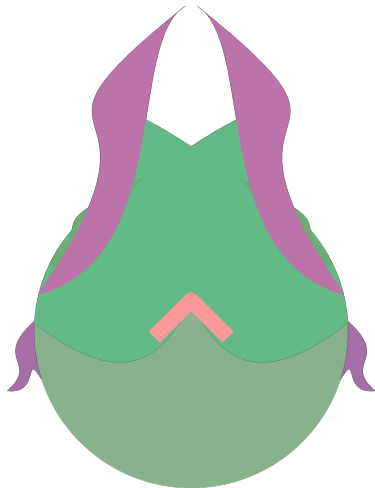
July the 16th 2020

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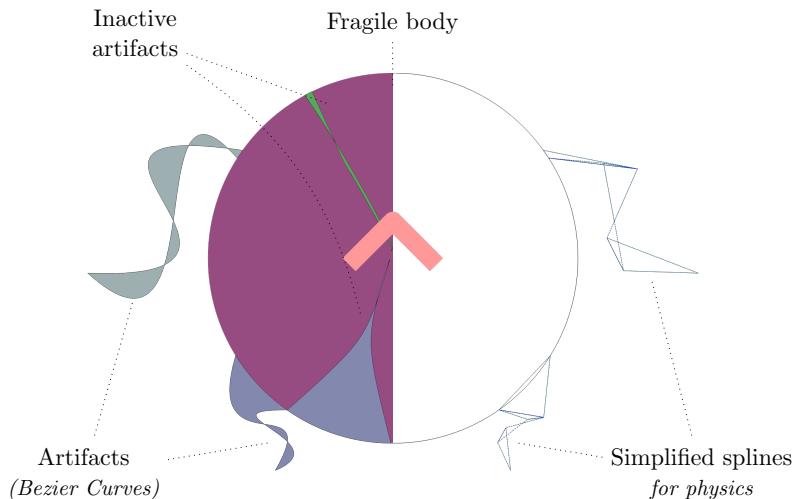
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Spline + Boids

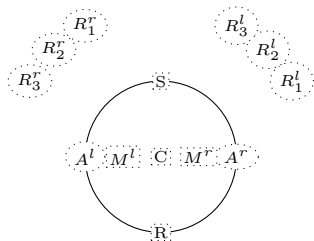


- 2D creatures
- Low-level combat
- Low-level vision

Anatomy



Neural controller



Inputs

R_i^s : retina cell triplet (r,g,b) i on side s

A^s : auditive cells (equal to number of channels)

—: proprioceptors (health, energy, efficiency)

Outputs

M^s : motor

C : Clock speed

R : Reproduction

S : Multi-channel signal

Powered by HyperNeat

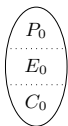
Misc

- Three stages of life
- Sexual dimorphism
- Closed system
- Sound emission/reception
- ...

Environment-Driven Evolutionary Selection (EDEnS)

- Parallel exploration of alternative “realities”
- Guided by a set of fitness function
- Evaluating populations
- Controlling *indirectly* through environments

Environment-Driven Evolutionary Selection (EDEnS)

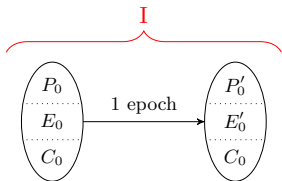


P/P' : pop. before/after evolution

E/E' : env. before/after variations

C : env. controller

Environment-Driven Evolutionary Selection (EDEnS)

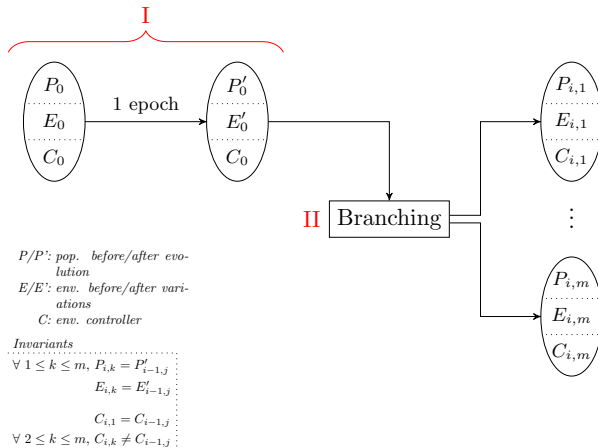


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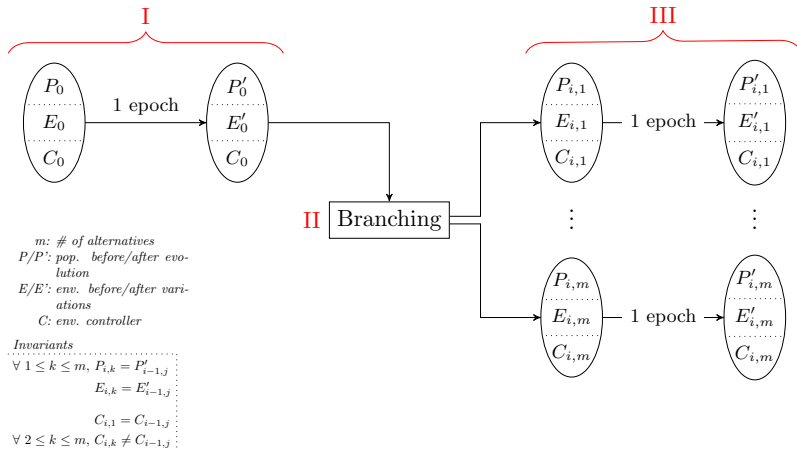
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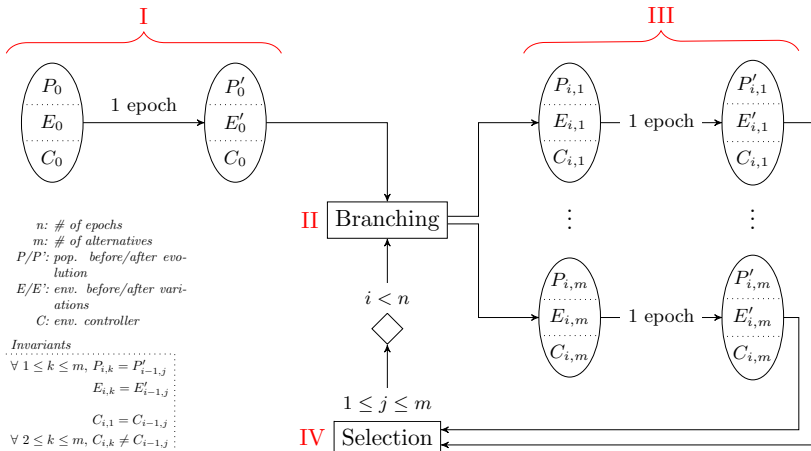
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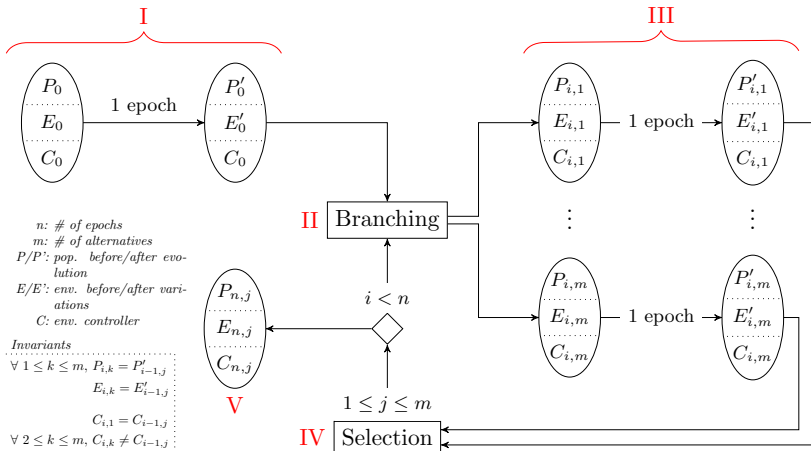
Environment-Driven Evolutionary Selection (EDEnS)



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Current investigations

- Emergence of predation
- Sexual reproduction
- Communication (cohesion, threat assessment, sexual selection ...)

Annexes