Bournemouth University

National Centre of Computer Animation

Crowd Simulation based on Emergent Behaviours

Carlos Pérez López

MSc Computer Animation and Visual Effects

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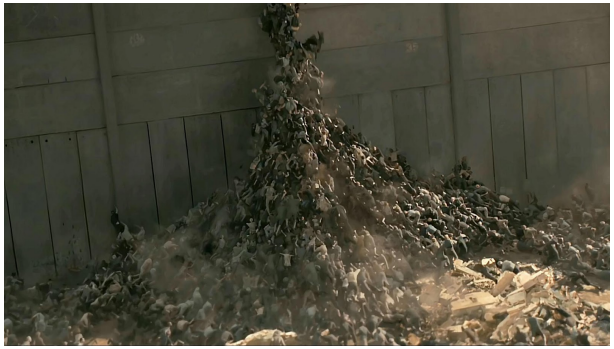
Crowd in Films



Crowd in Films

Contributions

- Visually stunning
- Catch public's attention
- Enrich story
- The story may just need it

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Issues

- Requires either real extra cast
- or more animators.
- Requires more time and money

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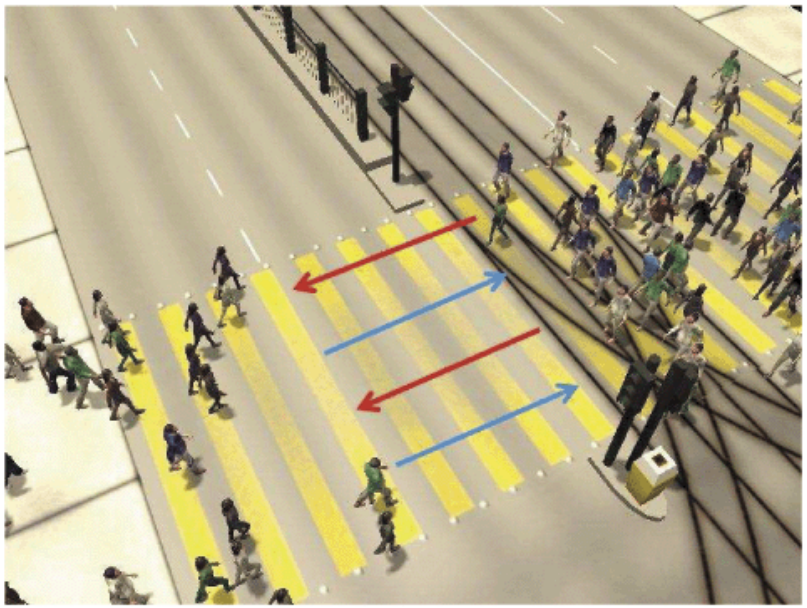
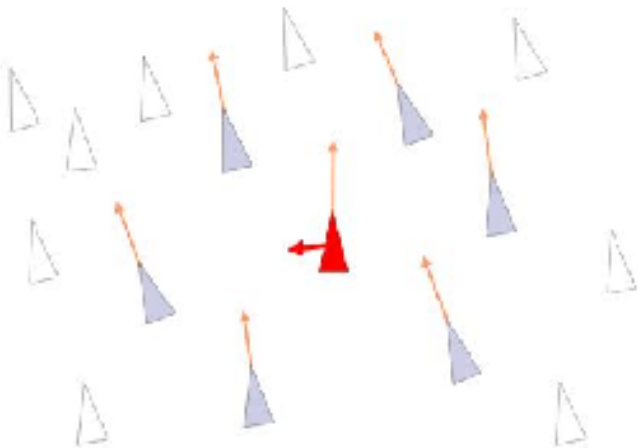
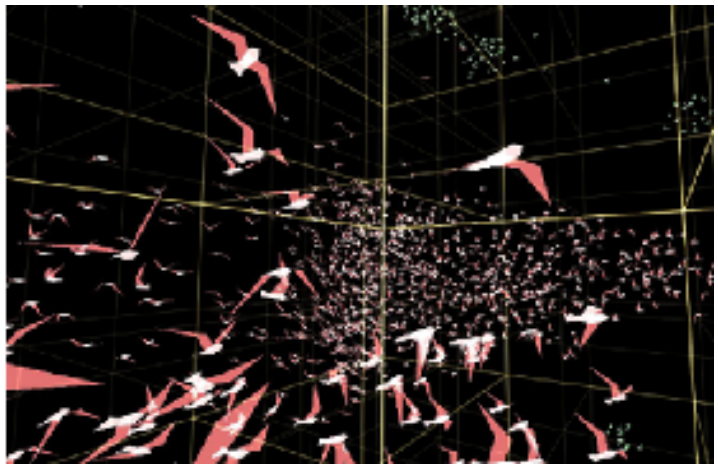
Motion Planning from Crowd

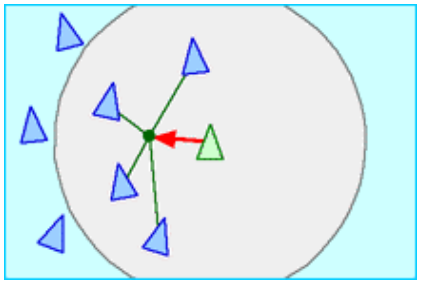


Crowd Motion Simulation

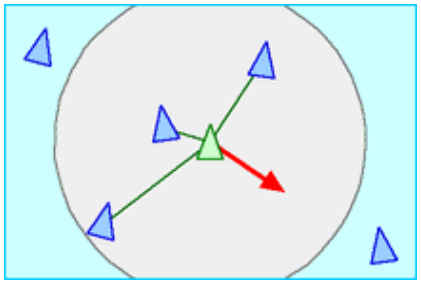




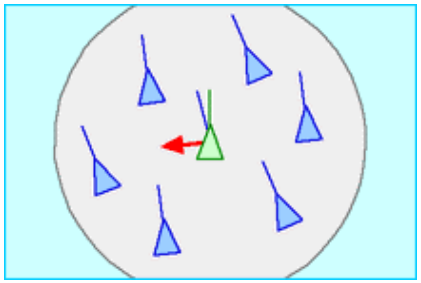
C. Reynold's Flocking Model



Cohesion



Separation



Alignment

MASSIVE Software

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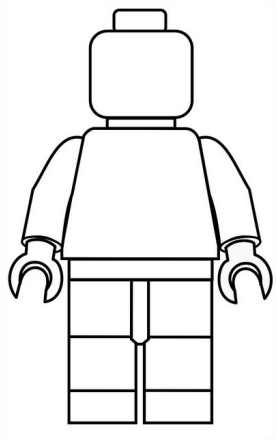
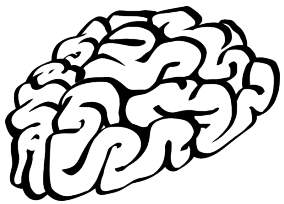
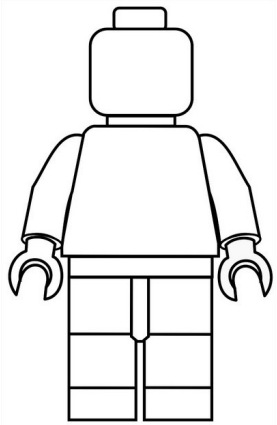
Agent



Agent





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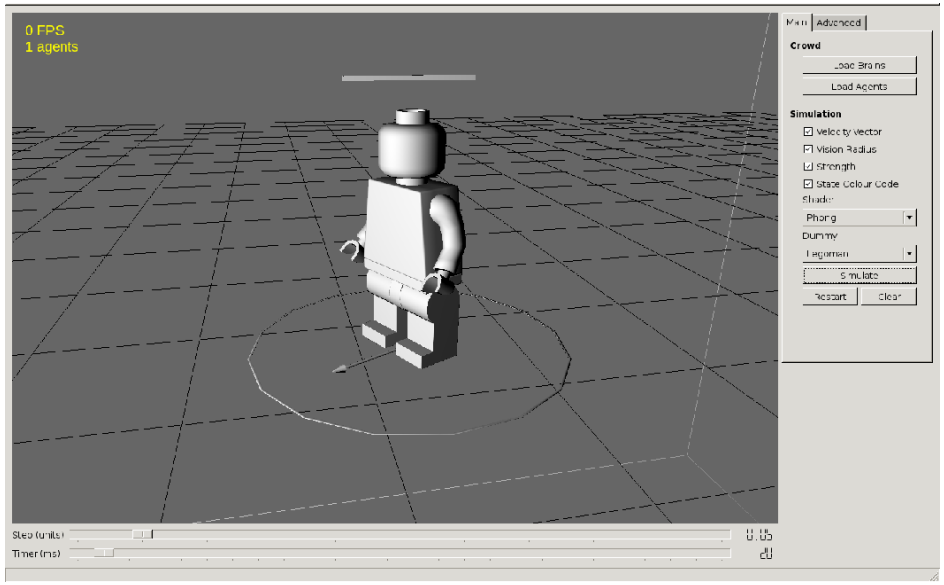
Agent Body

Physical Properties

- Mass
- Strength
- Maximum Strength
- Velocity
- Maximum Speed
- Vision Radius



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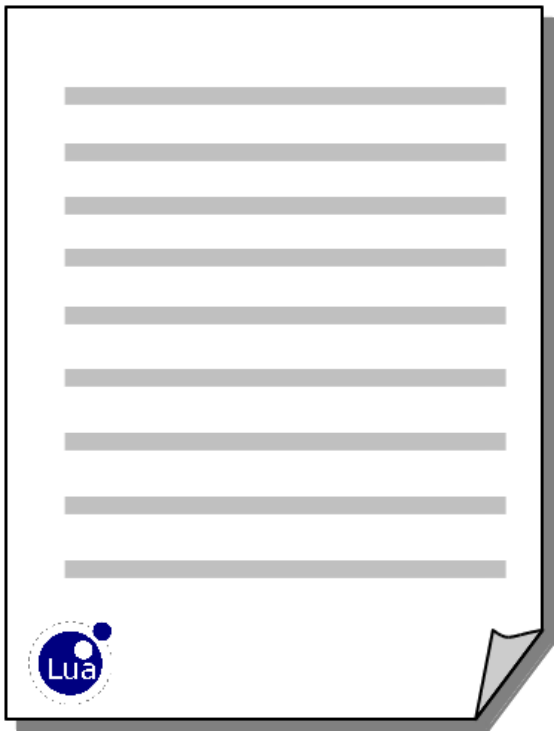
Agent Brain

Behaviour

The brain receives information about the agent body, the environment and the interactions with other agents. After processing, it determines which actions the agent must perform.



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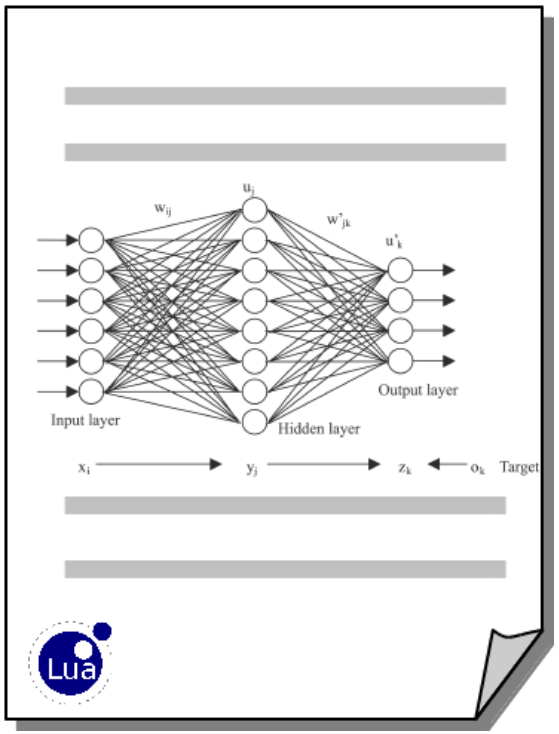

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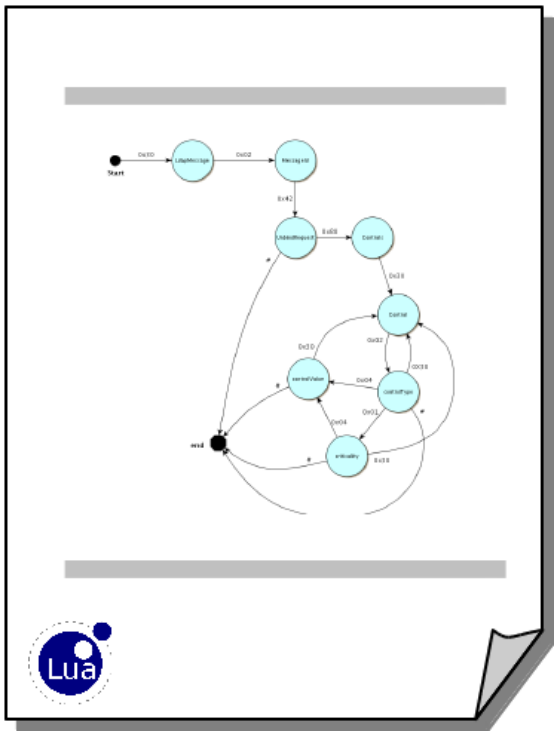

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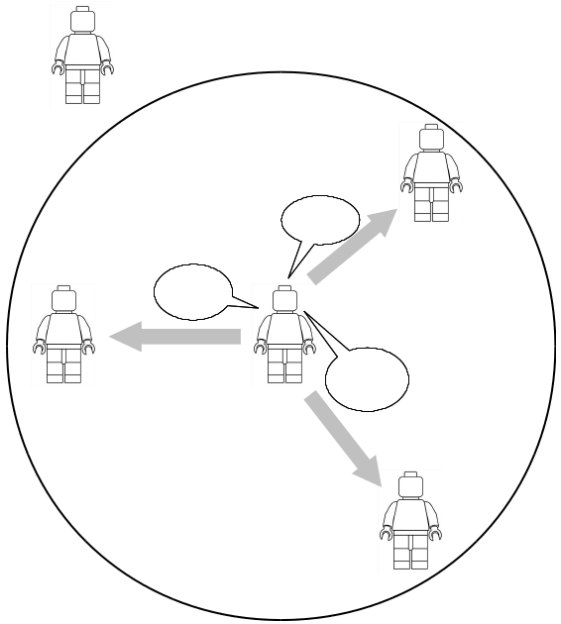
Interactions Among Agents

Message

- Agent Identification
- Label
- Position
- Strength



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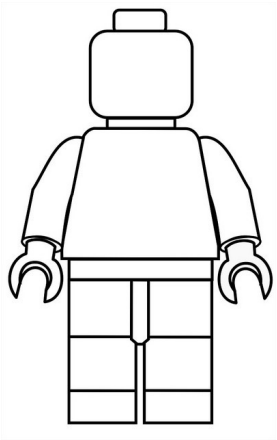
Shooter Droid



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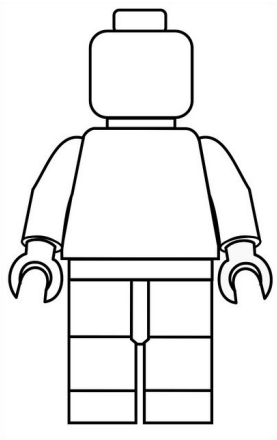

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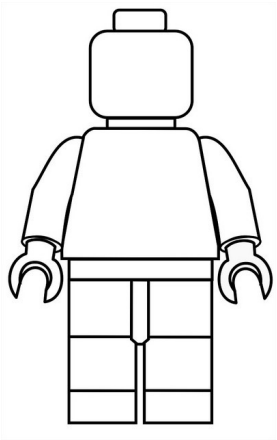

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