Simulating crowds
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Architecture

• The design of buildings

• Want to create spaces that are comfortable, even for large groups of people

• Problem: We don't know how well a design will work until after we spend millions creating it
Crowd Simulation

- **Problem:** We don't know how well a design will work until after we spend millions creating it.

- **Solution:** Simulate how a crowd of people would interact in this space virtually.
Unity Game Engine

- Navigation Meshes
- Behavior trees
Navigation Meshes

- Allow unity to find efficient paths in a complex space
- Unity handles all the routing, we just call “SetDestination”
- Each “person” becomes a NavMesh agent.
Behavior trees

- Recursively define a behavior as a set of behaviors to be performed in some manner, or as a unitary action.

- Forms a Tree
Future techniques

- Area of influence
- Virtual reality simulation
In summary

• We will use unity 3-D to simulate how crowds react to different environments

• We will take into account not only the effect the space has on individuals, but the effect of different objects using influence areas

• We will use VR to obtain data to help design more accurate simulations
Thank you’s

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• Davide Schaumann - postdoc who is the head of the project

• Atharva Kench - undergrad at Rutgers, my partner

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Sources


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