

COMET

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Research

- Read Papers which relate to COMET
- Research Federal guidelines
- Communicate with Charlotte Fire Dept.

Introduction

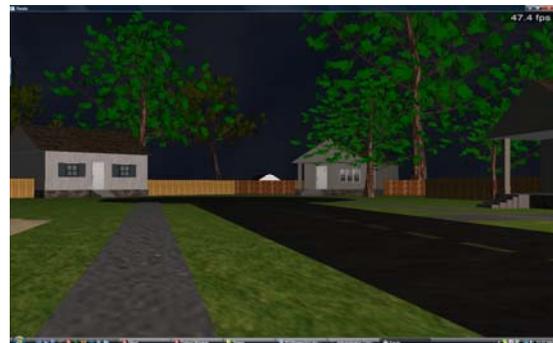
COMET (Coordinated On-scene Manager Emergency Trainer) is a training simulator for incident commanders. The job these commanders hold is very important because they have responsibility of dealing with disasters ranging from house fires to citywide catastrophes. The incident commander operates on scene giving directions to fire fighters, police, hazmat, and others.

COMET gives extra training to these commanders because the current training methods take a lot of man power and are only able to be deployed yearly at best. COMET tries to give the incident commanders access to an electronic simulation of real life events. We believe that the use of COMET can add to the current training methods and help the commanders become more ready in the case of a real emergency.

Background

- DEFACTO System
 - similar, yet top down view
 - doesn't create as much immersion
 - more interested in human/agent communication
- Incident Commander Game
 - high level
 - birds eye view
- Fireslayer Challenge
 - first person point of view
 - you play a firefighter who goes In buildings to rescue a family.

These systems all relate to COMET, yet are very different at the same time. COMET is first person point of view. You control agents who go in the buildings, extinguish fires, and rescue the bystanders. COMET will be the first of it's kind because none of the previous models are quite like it. COMET should be able to achieve a higher level of immersion because the player will feel as if he is actually at the scene, not looking down on a city in a bird's eye view.



Impact

- Experience in Python
- Learned Panda3D
 - Understanding the difference in game engines
 - A lot more processing power than XNA
- Learned Maya 8.5
 - Learned many modeling techniques
 - Introduced to shaders
 - Advanced texturing
 - Lighting basics
- Used SVN
 - Great experience for working in teams on big projects
- Read research papers
 - Learned how to read a long paper and understand the main points
 - Now able to think critically about others work
- Artificial Intelligence
 - Created a base for the future AI to be based on.



The final house on fire. The particle engine was developed by Kent Vasko.

Conclusions

The project is laid out for three years. We knew at the beginning of the project that we would only be starting the project. We have created quite a bit of groundwork for the simulator, creating the level designed especially for COMET. We also have begun work on agents that will be useful for the people working on this in the future.

Future Work

We hope that the work we have done will help get project funding for a future graduate student. The future work includes finishing the agents, visiting the Charlotte Fire Department, creating animations from a motion capture system., pose estimation, and an interaction graph to give feedback to the fig