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Fish Population Data Visualisation, Internships at Great Northern Way Campus, Vancouver

Published by **Bart** on April 9th, 2008 in Art, Games, Videotutorials

Here's a use for Blender that you haven't seen before: the Great Northern Way Campus in Vancouver, BC, Canada, has been quietly working with Blender and the Blender Game Engine to produce scientific data visualizations on the effect of fishing policy on fish populations. In addition, they're looking for summer interns who can work with Blender.

Stephen Danic wrote:

> In early January 2008, representatives from the University of British Columbia (UBC) Fisheries Centre met with a group of students from the Masters of Digital Media program to form a collaborative partnership to develop an unusual product. The UBC Fisheries Centre needed a tool for effectively communicating their esoteric, statistically derived data to a multitude of non-scientists. What the UBC Fisheries Centre needed was a graphical representation of their scientific data which could easily be interpreted by people unfamiliar with their research.
>
> The data which the UBC Fisheries Centre is concerned about comes in the form of graphs and statistical tables, and describes projected populations of marine species as a result of fishing policy. This data is based on the output from a suite of ecological modeling software called EcoPath with EcoSim (EwE: http://www.ecopath.org/) and is important to many people: to consumers, fisheries industry professionals and governments. The data can be a great help in informing policy makers as to whether or not the status quo is promoting a sustainable future for marine ecosystems.
>
> The solution was what is called a 'data visualization', and now, three months down the road from the original conception, through many stages of development, the project is nearing completion. The MDM student team has built a product which will allow the UBC Fisheries Centre to display on a screen in 3D, a select number of species in real-time; the data which EwE delivers drives a dynamic 3D environment which instantaneously represents a point in the future which is inevitable, based on how the fishing industry is conducted today. This means that instead of committing to a decision which may or may not work, policy makers can use this software to test potential approaches to fisheries management and to see first hand what the results are likely to be.
>
> Thus far, the MDM student team is very happy with their progress. The data visualization which the MDM student team has developed uses video game technology as a basis for the platform; this could be the first scientific data visualization which relies on a video game engine for its backbone - hence this is a unique product. The final version of the product may very well have considerable impact on the management of future marine ecosystems - hence it is relevant and inspirational. The team is very happy with everything they have accomplished thus far.

Links

- Recent student showcase presentation.
- 17 minute video tutorial covering the entire pipeline: modeling, uv mapping, texturing, animating, and gamelogic.

Internships

Stephen continues:

> Additionally, the UBC Fisheries Centre in Vancouver, BC, Canada, is looking for a couple of summer interns for this project. If you're looking for a summer job working with Blender, this might be a good opportunity. You'd have be able to demonstrate your skill with Blender, Blender Game Engine, and Python in order to qualify for the job. Bonus points for GLSL shader experience.
>
> Feel free to contact sdanic on gmail if you're interested in the position and you have a good portfolio or demoreel.

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27 Responses to "Fish Population Data Visualisation, Internships at Great Northern Way Campus, Vancouver"

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1. 1 **Steven Wyatt** Apr 9th, 2008 at 5:43 am

   Nice use of Blender and its game engine hope to see more soon.

2. 2 **mike** Apr 9th, 2008 at 7:35 am

   Impressive. What am I doing at UBC Engineering?

3. 3 **Stephen Danic** Apr 9th, 2008 at 7:43 am

   Thanks.

   It's working pretty well for us. We might have to look into CrystalSpace for future versions. I just hope that sensors and actuators are as easy to set up.

4. 4 **Chris Stones** Apr 9th, 2008 at 8:14 am

   That's exactly what I want to do with blender! Data visualization projects!

5. 5 **Johan** Apr 9th, 2008 at 8:25 am

   Hey Bart,
   Always on the look-out for different Blender applications. Appreciate it!

6. 6 **kit89** Apr 9th, 2008 at 9:55 am

   That's just cool. :)

7. 7 **Statik** Apr 9th, 2008 at 10:13 am

   Makes me wonder if BlenderPeople might fit this project as well!

8. 8 **aws357** Apr 9th, 2008 at 10:47 am

   Python —> SciPy
   Blender + SciPy —> SciBlend

   :)

9. 9 **Stephen Danic** Apr 9th, 2008 at 11:16 am

   Re: SciPy. Cool. We're using Python Imaging Library (PIL) already, but I didn't know about SciPy. Lots of potential there.

   Re: Blender People. We're still looking for a good flocking implementation. Boids is the best I've seen, but we don't have it implemented yet. It needs to be realtime and "cheap" (CPU inexpensive); framerate is already an issue. Does BlenderPeople work in the game engine or is it more for rendering crowds?

10. 10 **Vernoth** Apr 9th, 2008 at 12:30 pm

    This is going to be a rant, so beware :D

    I like the idea of using Blender for data visualization… but I kind of doubt the scientific usefulness of this particular

one. IMO "new" ways of visualizing data should concentrate on supporting recognition of patterns in the data by the viewers. Don't ask me what that would exactly be here… but what I am quite sure of is, that a nicely rendered Aquarium-like ocean simulator looks nice but doesn't help scientists to analyze their data.

Although I don't like the idea… or doubt the effectiveness of this…
Well yeah, you still did a great job at creating this visualization ;)

11. 11 **RedBirdiii** Apr 9th, 2008 at 12:34 pm

    Wow!!
    The title of the article could be the longest among all titles in this website..
    Anyway, cool use of blender..

12. 12 **TweakingKnobs** Apr 9th, 2008 at 12:44 pm

    cool , really cool

13. 13 **Ataru** Apr 9th, 2008 at 1:58 pm

    Nice stuff! I really like it! :-D

    @Chris Stones–I can totally see you doing that. LOL.

14. 14 **ROUBAL** Apr 9th, 2008 at 2:03 pm

    Interesting use of Blender.

    It is funny to find this article now, because I'm working on an underwater animation with a shark hunting other fishes…

15. 15 **Dalai Felinto** Apr 9th, 2008 at 3:35 pm

    Congratulations for the survey, very impressive.

    Fortunately I'm in Vancouver right now looking for an Internship (Jun-Jul-Aug) in an animation studio or something related using Blender.

    How can I contact Stephen Danic? They accept international interns? (I'm from Brazil)

    Thanks Blendernation,
    it made my day!

16. 16 **Bart** Apr 9th, 2008 at 4:18 pm

    @Dalai: contact info is in the post

17. 17 **Villy Christensen** Apr 9th, 2008 at 6:13 pm

    Re. the data visualization issue (response to Vernoth).
    The intention with this project is not to visualize the data for (us) scientists, but to show to fisheries managers and the public at large what our numbers means. We have developed pretty advanced models with 'scientific' interfaces, which scientists understand, and now want to bring that understanding to non-scientists. Thus, our (UBC Fisheries Centre) cooperation with MDM is to visualize the data for other stakeholders with interest in fisheries management issues.

18. 18 **waystar** Apr 9th, 2008 at 6:37 pm

    That video tutorial is one of the best I've watched. So simple and straightforward, no steps performed too quickly, everything explained and repeated at an appropriate pace.

19. **19 zapwow** Apr 9th, 2008 at 7:57 pm

    Cool video… but those birds are freaking annoying!

20. **20 Vernoth** Apr 9th, 2008 at 8:18 pm

    @Villy. I see… I just skipped through the text and the video and thought it was meant as alternative (to diagrams and stuff) data visualization for scientists etc. My bad.

21. **21 Stephen Danic** Apr 9th, 2008 at 8:57 pm

    Sorry about the birds in the tutorial. Those are my pet budgies in the background.
    Next time I'll record in a quieter place. :)

22. **22 myselfhimself** Apr 9th, 2008 at 10:53 pm

    Hi
    I don't like the way the showcase video presentation was done.
    People there seem too proud of it.

23. **23 ByronK** Apr 10th, 2008 at 2:50 am

    Very good to see that Blender can even help out with the environment

24. **24 Stephen Danic** Apr 10th, 2008 at 6:49 am

    @myselfhimself

    We do realize that it's not a perfect product. That's why we're still working on it.

    If we seem too proud in print, it might be a hint of PR spin.
    If we seem too proud in the presentation, it might be that we were really nervous presenting to a room full of people.
    Maybe the shtick was over the top as well.
    If the showcase video sucks, you can blame me. I didn't really edit it like I should have. I should learn from Chris. :)

    In any case, I'd love to hear what/how we should improve. That's how we learn.

    Keep in mind that it's realtime, not rendered.

25. **25 ysvry** Apr 12th, 2008 at 12:13 am

    great tool, but there will always be unknown variables that make this simulations as good as guesswork.
    Visiualizing it in 3d will (maybe) give a falls sence of reality that isnt realy there.
    good tool for manipulating voters and the like for sure. :P
    if you convince your profs to invest some money into improving blenders simulation capabilities thats fine with me.
    what about a car simulation to solve suburban congestion?
    just my 2 cnts.

26. **26 BrianH** Apr 25th, 2008 at 5:41 am

    It's very interesting to read about, but I had to shut off the video tutorial after about 3 minutes of wanting to kill the birds in the background.

27. **27 manu** Jun 23rd, 2008 at 10:00 am

    @Stephen Danic

    I am very interested in this project but the birds are killing me too. Could you please take another 20 minutes and do

another voiceover for the video without the birds? I am sure you simply dont hear them anymore but others do. :p

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