

Data & Visualization Weekly Projects Report

2021_04_09

Active Projects

Active Development

- Biosphere 2 Biosystems Visualization Collaboration
- Data Visualization Roadshow With Jeff Oliver
 - Reaching out to the NSCS department to ask whether they have a graduate seminar which we can present to?
- Independent Study Abby Collier
 - Met with Abby several times this week
 - The main focus of our time is on how to get her help with the touch designer visualizations for the show
 - Kay has requested a recreation of this effect <https://www.youtube.com/watch?v=r9dd6csVZbk> and I'm making it Abby's focus
 - Discussed feedback loops, texture lookups, neighbor queries, and soon we will talk about writing custom materials with shader code
- Judging The Data Visualization Challenge
- Migrant Forensic Empathy Project: A Digital Borderlands Grant Initiative
 - Big push on this project this week
 - Wrote a Rust program which uses a quad tree structure to organize the 3d points of all our landscape vertices
 - When we convert the Medical Examiner's office gps data to mesh coordinates we can then query the x,z position of a cross against the quad tree and get optimized calculations for the y coordinate where the cross should be placed.
 - I then created a demo scene to show the mesh and the crosses placed in the landscape <https://test-cross-placement.baylyd.repl.co/>
 - <10% of crosses placed above mesh in the air, so this next week I'll have to do some test cases with a smaller mesh, and known placement points.
- Oyster Vibrio Literature Review
 - Met with Emily and created a leaflet webmap with her lit review GPS data
 - Will meet maximum 2 more times to help her get the website ready for her paper
- Remote Visualization Infrastructure Development
- Resbaz Organizer And Workshop Provider
 - Met with Chinmay Joshi
 - Discussed our todo items for getting the zoom links created
 - Discussed scripts to provide the helpers and the workshop presenters so that things go smoother than the last time that Chinmay attended
 - Discussed new approach to the recordings, and double checking on Accessibility strategies with Kelsey Gonzalez

- **Stellarscape Astronomy Multimedia Dance Performance**
 - Big meeting this week
 - Also heard back from Brant Robertson and Evan Schneider that we can use their Galaxy outflow simulation visualization for our show
 - This is such a cool looking effect, I don't know where it will fit in yet though
 - Ran into some big performance problems with Touch Designer, but their most recent update appears to fix things
 - Made demos for meeting with Hayley and Kay
 - Will do more live outside testing with them next monday
 - Still stuck on creating simple propagation effects
 - Watched new series of videos by Stanslav Glasov, but he didn't go into the subject I was looking for on how to generate point/line network effects in touch designer on the GPU

Consultations

Upcoming

- Bryan Carter Photogrammetry
- Has Faculty Collaborations With Holodeck
- Jason Hortin Holographic Dance Graduate Project
- Observablehq Portfolio Of Data Visualization
- Ray Tracing On The Hpc

Completed For Fiscal Year

Workshops/Trainings

- Mt. Lemmon In Your Pocket-Creating A Virtual Reality Tour
 - https://rtdatavis.github.io/#GIS_week2020
- Presentation For Civil Engineering Department
 - <https://docs.google.com/presentation/d/15Z9zcxU4vIIgFPnKEcaGv9GH7JtjNdx4Xpnjec0EzEc/edit>
- Tech Core Level Up Presentation Monday, Sept 28 2020
 - <https://rtdatavis.github.io/#techcoresept28>
- Tech Core Level Up Presentation Tuesday, Mar 17 2020
 - <https://rtdatavis.github.io/#techcoremar20>
- Womens Hackathon: Visualization On The Web Workshop
 - <https://womenshackathon.arizona.edu/>
 - <https://www.youtube.com/channel/UCe1YiJ53o3qcayVs4cipeXA/videos>
 - <https://www.youtube.com/watch?v=VLwPOtqW8oM>

Completed Projects/Collaborations

- 3D & Vr Retrofit Azlive
 - <https://rtdatavis.github.io/#retrofitAZLIVE>
- Bio5 Virtual Reality Tour

- <https://rtdatavis.github.io/#bio5-vr-tour>
- Covid Retail Mitigation Web Scraping
 - <https://rtdatavis.github.io/#retailscraping>
- Force Directed Biochem Networks
 - <https://rtdatavis.github.io/#biochem-networks>
- Neuro Choropleth
 - <https://rtdatavis.github.io/#neuro-choro>
- Spring Break Covid Photo Maps
 - <https://rtdatavis.github.io/#spring-break-covid>

Infrastructure Developed

- Autamus Web Interface
 - https://rtdatavis.github.io/#autamus_interface
- Virtualgl For Nvidia Accelerated Remote Hpc Visualizations
 - <https://rtdatavis.github.io/#virtualgl>
- Xpra And Singularity For Comprehensive Graphical Application Support On Hpc
 - <https://rtdatavis.github.io/#xprasingularity>

Protocols and Analysis Developed