

Data & Visualization Weekly Projects Report

2021_07_30

Active Projects

Active Development

- Biosphere 2 Biosystems Visualization Collaboration
- Collaboration With Techcore'S Summer Internship
 - Completed incorporating the xorshift PRNG algorithm into the compute shader and it works much better for random uniform 3d motion for gas particles
 - successfully incorporated Laura Merediths CO2 and N2O data into the visualization such that the concentrations in the data reflect in the transparency of the total number of particles
 - Generated a background population of particles to suggest the existence of gas particles not just at the locations where the probes were, but without apparent changes in concentration
- Data Visualization Roadshow With Jeff Oliver
 - Reviewed form for collaborative drop ins with myself Jeff Oliver and Kiri Carini at Catalyst
 - Received ENVIS seminar data from Kirsten Ball
 - Set presentation date for ENVIS on sept 27th at 3pm
- Independent Study Abby Collier
 - Met with Abby and discussed how to use the multithreading concept of “atomic” counters for use in compute shaders
 - worked on several effects where the particles that are generated come off of the dancer and move in the direction that the dancer was proceeding when the particles were born.
- Radiology 1St Year Resident Carl Sabotke
- Remote Visualization Infrastructure Development
- Stellarscape Astronomy Multimedia Dance Performance
 - Deadline appears to be less demanding and more work seems to be hitting the mark
 - Produced several visual outputs from theoretical astrophysics simulations, one of which required the HPC for the visualization using a jupyter notebook and the Datashader python library
 - The second of which has snapshots that are small enough size of render within touch designer still
 - Spent the remainder of the week making modifications to existing effects for movements 1 and 2 of the show in accordance with feedback I've received from the director
 - Just found out that several internationally known multimedia artists have been approached about working on this show also, and one of them seems to have agreed which is very exciting.

Consultations

Upcoming

- Has Faculty Collaborations With Holodeck
- Observablehq Portfolio Of Data Visualization
- Ray Tracing On The Hpc

Completed For Fiscal Year

Recently Completed

- Discussion about Social Network Analysis Visualizations
 - NA

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>
- Resbaz Organizer And Workshop Provider
 - https://hackmd.io/-XS5Mqh8TA2EHjTHCQ_4tw
- 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>
- Migrant Forensic Empathy Project: A Digital Borderlands Grant Initiative
 - <https://mfemigrantdeathmap.baylyd.repl.co/>
 - https://devinbayly.github.io/digital_borderlands_conversion/src/mesh_test.html
 - https://devinbayly.github.io/digital_borderlands_conversion/src/index.html
 - https://hackmd.io/Qo_HmwmwSTG-QPYVTJl0Lg?view
 - <https://osf.io/v9swc>

- Neuro Choropleth
 - <https://rtdatavis.github.io/#neuro-choro>
- Oyster Vibrio Literature Review
 - TBA
- Spring Break Covid Photo Maps
 - <https://rtdatavis.github.io/#spring-break-covid>

Completed Consultations

- Discussion about Social Network Analysis Visualizations
 - NA
- Advice For Thesis Defense Visualizations, Sabrina Nardin
 - NA
- Bryan Carter Photogrammetry
 - <https://sketchfab.com/3d-models/churche-maze-photogrammetry-d0767af08a5d498fb960efe3ac83385f>
 - https://drive.google.com/file/d/11E5_912vW6kuPBxcujGKs-UQD9S3jA-H/view?usp=sharing

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