Data & Visualization Weekly Projects Report 2021_03_12

Active Projects

Active Development

- Argonne Gpu Hackathon
  - Should hear from the organizers about whether we are admitted this week
- Biosphere 2 Biosystems Visualization Collaboration
  - Produced multithreading rust program that can do our "point to texture" conversion
  - from here I generated a brief example animation to demonstrate how we can use these textures with particle system visualizations
  - https://drive.google.com/file/d/13mIKrDNFu6SYvQSZCQxqFJnntc7HCl0y/view?usp=sharing
  - Aaron Bugaj notified us that the green fund is no longer a viable option for funding the media vis walls grant
  - Treating this year as a prototype of the program for working with students that have Biological System visualizations they want to do
- Independent Study Abby Collier
  - Had our usual friday meeting
  - Discussed advanced interaction via geometric/semantic zooms, and data brushing
  - Spent the last 30 minutes discussing her feature piece for the data visualization section of the independent study
  - Have settled on doing a visualization of the Squirrel Census data hosted on Github
- Judging The Data Visualization Challenge
  - Spoke with Jeff Oliver about helping with a peer review session for individuals participating in the data visualization challenge
- Migrant Forensic Empathy Project: A Digital Borderlands Grant Initiative
  - Generated first draft of content converted to Aframe https://drive.google.com/file/d/1GAPmOVXS1lg
  - Some issues listed here in my development issue tracker https://github.com/DevinBayly/digital_borderlands_conversion/projects/1
- Remote Visualization Infrastructure Development
  - Succeeded in using Vulkan via NoMachine remote desktop running on subdivided V100 Nvidia GPU
  - Created a screen cast video explaining the setup steps and sent to Jeremy Fischer in charge of NSF's Exosphere
  - He's very excited and is going to use the video to create documentation for users interested in my workflow when Exosphere is released to the public
- Resbaz Organizer And Workshop Provider
  - Planning on trello
  - Discussing the needs for Zoom and how to use gather.town for com-

munity sessions
- Stellarscape Astronomy Multimedia Dance Performance
  - Produced particle system visualizations driven by fluid mechanics coupled to user input (mouse or microsoft kinect)
  - Created first particle system with interconnecting lines using Kay's audio input
  - Discussing presentation options with Win Burleson for the top down dancer on stage section of movement 1
  - Found second researcher James Wadsley who may be able to provide solar formation SPH (smoothed particle hydrodynamics) simulations
- Womens Hackathon: Visualization On The Web Workshop
  - Taught "Making art on the web with code" workshop one more time
  - Low attendance (4 people)
  - Tested using repl.it collaborative coding platform for teaching, proved a bit complex and prone to people accidentally deleting the entire program
  - Facilitated other needs with the discord chat such as sharing the youtube links when asked for

Consultations

Upcoming

- Bryan Carter Photogrammetry
- Cyverse Container Bootcamp Sig On Remote Visualization
- Has Faculty Collaborations With Holodeck
- Jason Hortin Holographic Dance Graduate Project
- Observablehq Portfolio Of Data Visualization
- Oyster Vibrio Literature Review
- 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

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