Data & Visualization Weekly Projects Report 2021_10_15

Active Projects

Active Development

- ENVS Term paper Consultation on Cu+ exposure and environment resilience
  - I met with Taylor McCoy this week to help her plan her term paper visualizations during my drop in hours
  - I also shared with her the google colab platform introduction for using python in a notebook environment without having to perform installations
- CATalyst data studio vis wall playlist
  - Met with Jen and created a working prototype web app that pulls link urls from a google sheet to view for a predetermined amount of time before switching to the next one
  - This will allow the CATalyst big display wall to remain active in between booked sessions
  - Unfortunately they are now having technical difficulties with the right side of the vis computer's display and the keyboard and mouse seem to not be interfacing correctly with the computer being displayed unless I use my own device
- Thermal Imaging Project
  - Met with Ed in person and discussed details of the project as well as a roadmap and ways to provide updates as the collaboration gets underway
  - I have agreed to work 10 hours a week on this project for October and in November I'll have a chance to re evaluate the amount of availability I have to increase that amount
  - They have a milestone document dealine that they need my work to be performed for in January so that is the next nearest deadline for this project
  - The plan is to begin going through the excel spreadsheet logs to find good candidate video phenomena to practice various computer vision algorithms on with python's Open CV package
- IEEE Satellite Vis Conference Planning
  - This week we planned out the room assignments for various simulcast sessions from the main IEEE conference
  - I also booked the catalyst data studio to spend a half day filming for the promotional video
  - Josh and Nirav wanted me to also be part of the interview team so I got to be on camera talking about Research Technologies and the goal of supporting the data visualization community here on campus
  - I also reached out to a few other people who may be interested in

being exhibitors at the Visualization Showcase Lunch on Tuesday the 26th

- Vulkan on HPC
- Streaming Technology for HPC
- Data Visualization Roadshow With Jeff Oliver and Kiri Carini
  - Started draft presentation for Math RTG group presentation, outlined sections to change for the presentation since the last one we offered
  - Created some faceting examples using the Iris Dataset for the presentation and the live demo
  - Incorporated survey link and resources web page that Kiri Carini put together
  - Enrolled for the Visualizing the Future public symposium in which individuals at other universities discuss strategies for successful visualization service and education in the university context
- Independent Study Abby Collier
  - Started a new github repo for tracking the development and exercises related to using touch designer for the astro dance project
  - Worked on parabolic path effects with the goal of generating a visual effect for a musical climax cue in movement 2a
- Stellarscape Astronomy Multimedia Dance Performance
  - Had a tech test this week
  - Spent a long time working out how to stream video frames from a raspberry pi connected to a kinect dk infrared camera to the computer running touch designer for the purposes of motion tracking, but wasn't able to test this is the time we had available
  - Worked out timecodes for all the effects and transitions for movement 2a
  - Agreed to deliver all requested changes to the video effects between now and the 16th of November, following that there will only be changes made to the show running program
  - Reached out to Mike to see how the simulation video is coming after we asked for it to be extended
  - Connected with Dylan Murphy of the Ista department to ask specific questions about the Kalman filter and whether it's possible to use only one sensor to implement position estimation
- Virtual Nature
  - Met with Maria Harrington this week and she's very excited to make contact with various researchers at the university who are interested in Virtualization of plants and the environment for their research
  - Will connect her with Aaron Bugaj and Greg Barron-Gafford for collaboration on her next "Epic" Grant submission
  - Will arrange a time to gather folks for a presentation of her work with the goal of identifying individuals on campus interested in longer term collaborations
- Radiology 1St Year Resident Carl Sabotke

Consultations

- Laura Miller Math
  - Worked on getting the jellyfish velocity field out of the VTK/paraview format so that I could view it in a wider range of tools using Meshio the python 3d conversion package

Upcoming

- TURN UP Festival Performance NYU/UA collab
- Volumetric Capture processing on HPC
- Has Faculty Collaborations With Holodeck
- Ray Tracing On The Hpc
- Observablehq Portfolio Of Data Visualization

Completed For Fiscal Year

Recently Completed

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

- Collaboration With Techcore'S Summer Internship
  - https://hackmd.io/xi_m4Kj6QDenBR3ZAfN3iw?edit
  - 'Project folder on gdrive': 'https://drive.google.com/drive/folders/13v9QfUFVjQD-x7dh8chQZFvAxmy5zmx6?usp=sharing'
  - 'videos': 'https://drive.google.com/drive/folders/18tT28oLiXFH1wH8NGUwSU1K0URyzJq9o?usp=s
  - 'Pecha Kucha style presentation': 'https://docs.google.com/presentation/d/1n6ggKJ-oG7fqHfVsLMnuYkAVh095B1RA7EcNx1RQ12M/edit?usp=sharing'
  - 'presentation video': 'https://www.youtube.com/watch?v=EiQ9S5lNbA8'
- 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

- Remote Visualization Infrastructure Development spring 2021
- 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