

# Data & Visualization Weekly Projects Report

## 2021\_09\_10

### Active Projects

#### Active Development

- Vulkan on HPC
  - Got help from Adam and Ric last week and was able to have the wgpu boids simulation running on the HPC sending frames to laptop with x11 forwarding
  - Adam also put the vulkan sdk into a module so that we could use it outside of r5u09n1 the puma node that he had set aside for testing
  - Started running into new errors `No valid $DISPLAY found. Unable to load module.` when trying to do other work on the HPC now though
- Streaming Technology for HPC
- Data Visualization Roadshow With Jeff Oliver
  - Had first drop in last week, spent time with Kiri figuring out how the semester might look
  - Planned out some presentations at the GIS day in November also
  - Aiming to create demonstration of streaming point cloud gdal stuff from HPC the same way the USGS uses Entwine for it's national Geospatial data
- Independent Study Abby Collier
  - Met to work on combining effects for the 1a movement's motion aura effect
  - This included teaching her about glsl atomic counters
  - implemented system by which she can work on the same Touch Designer files as me and labeled various parts of Kay's feedback by difficulty level to make it easier for her to assist me
- Stellarscape Astronomy Multimedia Dance Performance
  - Worked on feedback provided about movement 1 and 2 effects
- Virtual Nature
  - Met and discussed material in touch designer related to creating particle paths
  - This was accomplished using post processing feedback TOPS and also with a "sliding window" of particle position history
- Radiology 1St Year Resident Carl Sabotke

#### Consultations

#### Upcoming

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

## Completed For Fiscal Year

### Recently Completed

#### Workshops/Trainings

- Mt. Lemmon In Your Pocket-Creating A Virtual Reality Tour
  - [https://rtdatavis.github.io/#GIS\\_week2020](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](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](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=sharing>'}
  - {'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/mesh_test.html)
  - [https://devinbayly.github.io/digital\\_borderlands\\_conversion/src/index.html](https://devinbayly.github.io/digital_borderlands_conversion/src/index.html)
  - [https://hackmd.io/Qo\\_HmwmwSTG-QPYVTJl0Lg?view](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](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](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**