University of Houston

HPE Data Science Institute

Syllabus: Data Visualization using Paraview and Tableau

Instructors: Dr. Jerry Ebalunode; Ishita Sharma

Email: jebalunode@uh.edu; isharma3@central.uh.edu

Office Hours: Online and By appointment

Location: Online

Website: https://secure.hpedsi.uh.edu/training

Course description: This tutorial will provide hands-on skills to use modern data visualization and analysis platforms, specifically the open source parallel Paraview and Tableau. Paraview is very powerful and popular in the HPC scientific and engineering research communities. In the ParaView part, we will explore representations, color-scales and their controls, data filters, how to build pipelines, multi-view & camera links using synthetic seismic data, streamline plots, plot-over-line analysis, and histograms. Also, the calculator tool, datasets & time, animations & their controls, time interpolation, camera animations, static vector field animations, and Python scripting. Finally, the course will cover how to use these tools/skills to do remote, parallel visualization using HPE DSI computer clusters. In the Tableau workshop, we will use Tableau Public to create interactive data visualizations. It will cover an overview of the program and provide hands-on experience creating basic charts and maps, as well as creating interactive web-based visualization dashboards. We will also use more advanced features in Tableau to manage data, and use calculations and parameters to make views more interactive. In the end, students will publish their visualizations to the Tableau Public web server.

Prerequisites: Familiarity with the 'print' and 'for' commands of the python language will come handy but are not mandatory for the final Paraview classes.

Attendance Requirement:
Good standing on Attendance grade (>50%) would be required to see new course materials, homework assignments, and exams/projects as the course proceeds.
Also, for students interested in getting a badge or certificate for completing this course, an attendance grade of **at least 12 hours of the class meeting sessions is required, to be qualified for passing the course and getting the badge.**

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Textbook: None Required. Lecture notes would be provided through course website.

Evaluation (tentative): Attendance: 10%, In-class/HW assignments: 40%, final project: 50%

Tentative Course Schedule:

Week 1	**Introduction to Tableau**
Week 2	**More advanced Tableau;**
Week	**Introduction to ParaView**
Week 4	**Animations with Paraview**
Week	**Automation with python and remote visualization with Paraview**
Week 6	**Final Project**

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