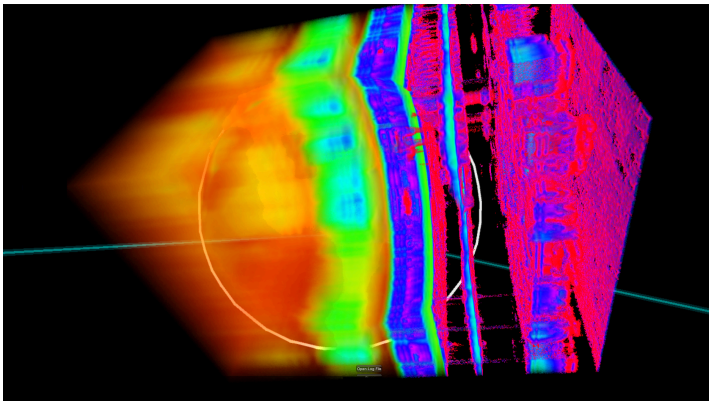
MAJOR IN DATA SCIENCE



Data Science is the discovery of knowledge and insight through the analysis of data. As such, it draws on the study of algorithms and their implementation from computer science, the power of abstraction and of geometric and topological formalism from mathematics, and the modeling and analysis of data from statistics. It has emerged as a separate field in response to the avalanche of data from web enabled sensors and instrumentation, mobile devices, web logs and transactions, and the availability of computing power for data storage and analysis. Modern data is challenging not only due to its large scale, but also because it is increasingly heterogeneous and unstructured. Information gleaned from this data none-the-less is revolutionizing diverse areas of human endeavor from health policy to high energy physics.

Concentrations

- Computer Science Concentration (https://catalog.colostate.edu/general-catalog/colleges/natural-sciences/data-science-major/computer-science-concentration/)
- Economics Concentration (https://catalog.colostate.edu/general-catalog/colleges/natural-sciences/data-science-major/economics-concentration/)
- Mathematics Concentration (https://catalog.colostate.edu/general-catalog/colleges/natural-sciences/data-science-major/mathematics-concentration/)
- Neuroscience Concentration (https://catalog.colostate.edu/general-catalog/colleges/natural-sciences/data-science-major/neuroscience-concentration/)
- Statistics Concentration (https://catalog.colostate.edu/general-catalog/colleges/natural-sciences/data-science-major/statistics-concentration/)

Learning Objectives

1. **Data Analysis**: Students will be able to determine which data analysis methods are appropriate in a wide variety of contexts, build and assess statistical models, perform the analyses, and report the results.
2. **Quantitative Literacy and Communication**: Students will be able to use graphical, oral, and written means to effectively and fluently communicate analysis results and ideas. Students will be able to interact and communicate with collaborators in a wide range of fields.
3. **Professional interactions**: Students will attain an ability to function effectively in teams to accomplish a common goal.
4. **Software design**: Students will have the ability to apply design and development principles in the construction of software systems of varying complexity.
5. **Co-curricular learning**: Students will have the opportunity to participate in Individual Study, Undergraduate Research, Honors Projects, Conferences attendance, and Internships.