## Risk Factors for Cardiovascular Heart Disease

Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels. Nearly half of all U.S. adults have some type of cardiovascular disease, a percentage that reflects recently updated guidelines for treating high blood pressure, according to a [new report Links to an external site.](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)). High blood pressure, also known as hypertension, can lead to heart attack, heart failure and stroke.

This [dataset Links to an external site.](https://www.kaggle.com/datasets/thedevastator/exploring-risk-factors-for-cardiovascular-diseas?resource=download)can be used to explore the risk factors of CVDs in adults. The aim is to understand how certain demographic factors, health behaviors and biological markers affect the development of heart disease. [Heart\_Dataset.xlsx](https://njit.instructure.com/users/42919/files/4665405?wrap=1&verifier=oaoRjzdfrjAC9aQ2552RjjiTyzHAQIb86BjRSuUf)[Download Heart\_Dataset.xlsx](https://njit.instructure.com/users/42919/files/4665405/download?verifier=oaoRjzdfrjAC9aQ2552RjjiTyzHAQIb86BjRSuUf&download_frd=1)contains information on age, gender, height, weight, blood pressure values, cholesterol levels, glucose levels, smoking habits and alcohol consumption of over 70 thousand individuals. Additionally, it outlines if the person is active or not and if they have any cardiovascular diseases.

This mini project can result in a great opportunity to apply classification machine learning algorithms to explore the potential relations between risk factors and cardiovascular disease that can ultimately lead to improved understanding of this serious health issue and design better preventive measures.

## United States Geological Survey on Earthquakes

Earthquakes form an integral part of our planet’s geology. It is crucial to gain an understanding of the frequency and strength of these seismic activities, as this information is essential in both the cause and preventions of damaging earthquakes. Fortunately for us, the United States Geological Survey (USGS) captures [comprehensive data Links to an external site.](https://www.kaggle.com/datasets/thedevastator/uncovering-geophysical-insights-analyzing-usgs-e)on earthquakes magnitude and location across the United States and its surrounding areas.

[Earthquakes\_Dataset.xlsx](https://njit.instructure.com/users/42919/files/4665448?wrap=1&verifier=rzwFbjN4UqtWhTwLSzl8M7qCplEWtFRZpLlj26mO)[Download Earthquakes\_Dataset.xlsx](https://njit.instructure.com/users/42919/files/4665448/download?verifier=rzwFbjN4UqtWhTwLSzl8M7qCplEWtFRZpLlj26mO&download_frd=1)contains 78510 records about the magnitude, location and frequency of seismic activity, which can be useful to build a more contextual picture around potential dangers posed by seismic activity. Both regression and classification machine learning algorithms can assist to uncovering geophysical insights about earthquakes, such as:

* Earthquake hazard maps to indicate seismic activity and risk levels in different areas.
* Predictive models of earthquake magnitude and probability of occurrence.
* Determine correlations between geological features, human activities, and seismic events.