Homework 1. Name: Meiwei He

* **Business problem:** Insurance Claims Fraud. People buy insurance to protect their own rights and interests, but some people will cheat insurance companies for claims by forging false materials. Although the insurance company will spend time and energy to verify the falsification, it will still be seriously affected.
* **What events/things the algorithm will score for possible fraud:** Insurance Claims for property damage and auto insurance claims. Assign a numerical probability that the insurance claims request is a fake claims.
* **Likely data and fields:** The algorithms will score each request. We’ll focus on policy details and provided evidence, like claim details, party details, vehicle details, repair details, risk details. Some categorical attributes with names: Vehicle Style, Gender, Marital Status, License Type, and Injury Type etc. Date attributes with names: Loss Date, Claim Date, and Police Notified Date etc. Numerical attributes with names: Repair Amount, Sum Insured, Market Value etc. Also, the files written by insurance agents, police, and clients. Other data we could use about insurance claims, for example,
  + - recorded conversations and other textual data types, such as emails. (analyzing by NLP)
    - detailed vehicle data, medical records, social media posts, criminal records
    - Financial statament from claimant

**What to look for:** How many times claim submissions in the policyholder’s lifetime?

How many companies has the policyholder submitted the same claim to?

Is the claimant feel flustered after submitting a large claim?

Are the provided receipts handwritten?

Are there any new claimants added on homeowners or auto insurance coverage shortly before submitting a claim?

Does this claimant suddenly submit a large claim after receiving treatment from a provider who associates with lots of large claim?

Has the car repair shop overcharged for repairing for exceeding the deductible?

Is the car's damage actually from an old accident or the latest one?

Is the claimant behind on car or mortgage payments?

How's the credit score of the claimant?

Are there inconsistencies in the provided evidence?