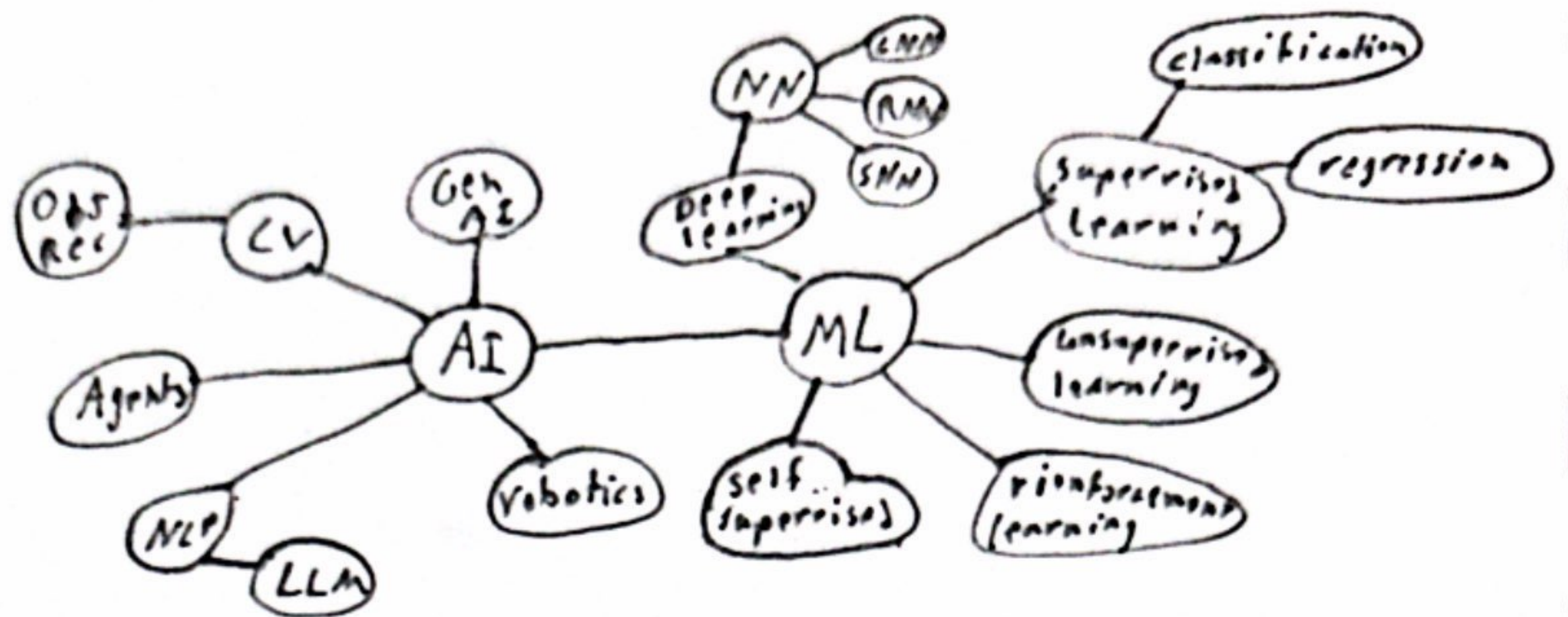


AI (Artificial intelligence)

- Makes computers do things that require human intelligence

Ex.: image recognition, email spam filter, chat GPT, etc

Ex Map:



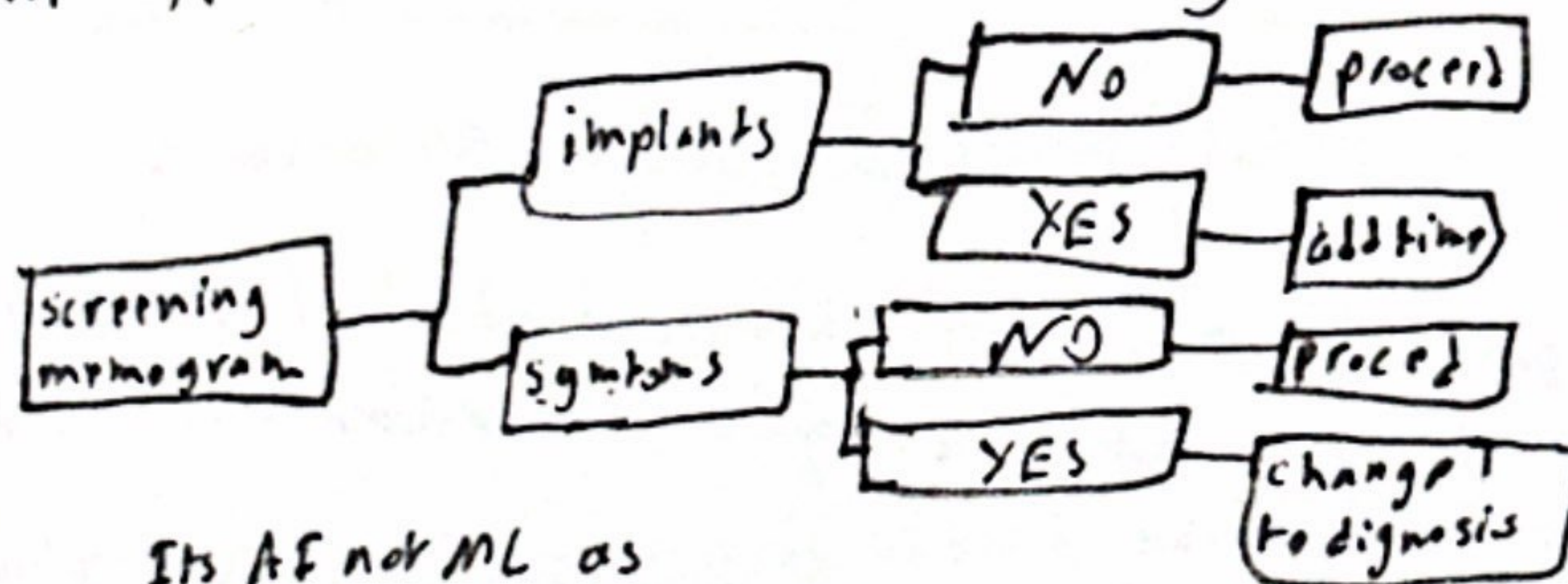
AI vs ML

! (for what is ML)
! (visit page # 2)

- NOT all AI is Machine learning

Ex of AI

(A Rule-based system Ex. an algorithm)



other Ex:
Chess bot,
as they
Follow Rules
and don't
learn from
data

Its AI not ML as

No need to learn from data but mimics human intelligence

(see pg 31 for PCA)

Independent component analysis (ICA) ^{unsupervised learning}

- Like PCA, ICA is a dimensionality reduction algorithm, but the goal is different. The goal is that ICA tries to separate mixed signals into their original independent sources. ICA tries to find components that are statistically independent, not just uncorrelated, independence is stronger than uncorrelation (ex gaussian dist), its often used in signal processing for ex given a mic recording in a party ICA can isolate each persons voice say the audio has 1000 features (features of voice, freq etc) PCA would reduce those 1000 features to fewer "principal components" that capture the most variance that pure dimensionality reduction ICA would try to separate the 10 independent voices for ex hidden in those 1000 mixed signals - that's source separation, not just reduction, though it does reduce the 113 data dimensions (though features)