01/23/2024

ITAI 2374

Notes From Lecture

Topic: AI in Agriculture & Healthcare

1. AI has not solved problems.
2. Problems created by AI.

Healthcare

* Diagnosis: stored in a cloud, which is not safe. What if AI can analyze an image and make it easier to diagnose? It could be expensive, but easier on the nurses and doctors.
* Predictive analysis: AI can provide preventive facts to help a person get better or even prevent a disease from happening. AI can identify high-risk potential patients with problems they do not know about. It can locate patterns in their lifestyle from years ago and maybe their future because patterns can change. Can lead to prevention care. Costume health plans, AI is being used for this.
* Hospital administration: Why can’t data be digital? Why is everything manual & or paper?

Example: Hospital mass-hired nurses- they reduce risk by transferring risk- they hired a digital company- medical systems. They have time shifts in a paper, which they must log into a system. The problem is that the data is not legible most of the time, and is not 100% correct, which causes drama and unnecessary problems. The person reading the data receives extra work, it’s a hassle for them, and they are tired.

* Drug discovery: new drugs are invented every year- which causes risk because of the time it takes to be approved. A company can buy data from all over the world to make drug discovery easier. Ai can solve this problem since there are so many drugs.

1. Drug compounds are different- there are different people, with different allergies. AI can help analyze drugs and create a personalized paper of what a specific person can have, and it is great because AI has data from all over the world. It will make it easier for the doctors as well.

* Heart Monitoring: AI can timely intervene. Because of your pulses, and how technology works.

DREAM APP: enter your symptoms in an AI app, don’t need to go to the doctor or Google symptoms. The app can give you a list of specialists based on your symptoms. The app can even state the availability of doctors, and hospitals for you to not even waste your time. The app will give you reviews. The app asks you for consent and makes the appointment for you, fills out all the information for you. The app will send you a reminder, with no paperwork, or wait time.

Problems to be solved:

* Data privacy, and data security: People don’t trust each other anymore. People can lose their jobs from misuse of information.
* The power to integrate. It is the biggest challenge.
* Biases in AI models. AI cannot understand data from other countries, which will create problems for people. Data needs to be diversified!!! Data cannot be limited.
* Integration with the hospital management system.
* Regulated approvals: everything needs to be passed through someone.
* ETHICAL QUESTIONS!! People are still scared, there are dilemmas. No one wants to trust the computers or a system.

Problems created by AI:

1. Job Displacements. Which can be good, but people are not happy about that.
2. Overreliance on technology- hacker attacks on airports and hotels.
3. Misdiagnosis: how can AI make good predictions? How do we know AI will not cause a bad prediction?
4. Increase complexity??
5. Money on infrastructure- digital diy. Are hospitals rich enough to implement AI in their system? Most hospitals are funded by the state, and most will not be given funding for AI.

Agriculture

Preventing care:

* Products are filled with unnecessary chemicals. Which is not good or healthy?
* People are not monitoring the product, because they don’t want to waste their time analyzing it.

Precision farming: to do what is exactly needed for the farm. Taking pictures. AI will give you what you need and will tell you what your farm and plants need.

Automated pest controls: You don’t need human beings; machines can do this.

I’ll-prediction: AI can understand and give you the patterns of the soil, plants, weather, and season. Framers are busy, AI is not.

Supply chain optimization: there’s too much demand, AI can predict what’s best in the season and the usage patterns.

Problems yet to be solved:

* Data privacy & security: data is not private; everyone can see the farmer’s information.
* Integration: farmers will take forever to implement AI because they are used to the old-school ways. Doing everything manually.
* High initial cost: AI is expensive. Not everyone can manage to buy AI systems.
* Agricultural results: How are we sure that what the system of AI is doing is correct?
* Biases in AI models: Need to be diverse. Different countries have different patterns. Maybe AI will only use European data, for a South American farm, which will only cause problems.

Problems create by AI:

* Job displacement- Once again people are scared AI may displace farmers’ jobs, but in reality, no one can replace human intelligence.
* Overreliance on technology: people may rely too much on technology and forget to do their duty in checking everything goes well.
* Digital dived- only catering to the rich farmers.
* Overall Impact: It may impact the way people view agriculture, which may be in a negative light.
* Increase complexity??

Add value on how! In every lecture note!

The show is how you will remember the value of AI.