

Kunstig Intelligens Eksamen 2025

Indholdsfortegnelse

Indholdsfortegnelse	1
Machine Learning Project (Part 1 of 2)	2
1. Datasæt	2
Part 2:	3
Problem	3
Model og Opsætning	3
Software Kode	3
Prompten	3
Test og resultater	4
Sammenligning med AI-genererede løsninger	4
Vores egen LLM:	5
ChatGPT:	6
Delkonklusion	6

Machine Learning Project (Part 1 of 2)

1. Datasæt

Students Mental Health Assignment:

<https://www.kaggle.com/datasets/sonia22222/students-mental-health-assessments/data>

Part 2:

Problem

Formålet med projektet er at **lave lokal AI, der kan generere personlig rådgivning til studerende i mental sundhedsrisiko**. Vi har taget udgangspunkt i det datasæt, der blev brugt i del 1: Students' Mental Health Assessments fra Kaggle. Ved at kombinere data som stressniveau, depression og angst score m.m., ønskede vi at give hver studerende individuel rådgivning.

Model og Opsætning

Vi brugte en lokal LLM, der blev sat op via Ollama.

- Ollama blev installeret på maskinen og modellen LLaMA3.2:1b blev hentet og gjort klar:

```
ollama run llama3.2:1b
```

Nu vil Ollama API'en blive brugt til at kommunikere med modellen på localhost:11434

Software Kode

Vi byggede et Python-program, som:

- Læser rækker fra CSV-filen med studerendes mentale helbredsdata.
- Udtrækker vigtige kolonner: stress, depression, angst, søvnkvalitet m.m.
- Formulerer en prompt til AI-modellen med elevens profil.
- Sender prompten til LLaMA3 via Ollama API og modtager personlig rådgivning.
- Udskriver svaret for hver studerende.

De mest relevante kolonner til personlig rådgivning er: Stress_Level, Depression_Score, Anxiety_Score, Sleep_Quality, Social_Support, Financial_Stress, Substance_Use, Counseling_Service_Use og Chronic_Illness.

Prompten

```
You are a student mental health advisor.
A student has the following profile:
- Stress Level: {row['Stress_Level']}
- Depression Score: {row['Depression_Score']}
- Anxiety Score: {row['Anxiety_Score']}
- Sleep Quality: {row['Sleep_Quality']}
- Social Support: {row['Social_Support']}
- Financial Stress: {row['Financial_Stress']}
- Uses Counseling Services: {row['Counseling_Service_Use']}
- Substance Use: {row['Substance_Use']}
- Has Chronic Illness: {row ['Chronic_Illness']}
```

Based on this, give 2-3 bullet points of practical, compassionate mental health advice tailored to this student's situation.

Test og resultater

Vi testede programmet på de første 5 rækker i datasættet og fik respons fra modellen som f.eks.:

--- Student #3 ---

Prompt:

You are a student mental health advisor. A student has the following profile:

- Stress Level: 4
- Depression Score: 0
- Anxiety Score: 3
- Sleep Quality: Good
- Social Support: Moderate
- Financial Stress: 4
- Uses Counseling Services: Occasionally
- Substance Use: Never
- Has Chronic Illness: No

Based on this, give 2-3 bullet points of practical, compassionate mental health advice tailored to this student's situation.

Advice:

Given the student's profile, here are 2-3 bullet points of practical, compassionate mental health advice:

- **Recognize that it's okay to not be okay**: Acknowledge that your stress level is high, and it's normal to feel overwhelmed. Recognizing this can help you take a breath.
- **Prioritize self-care in small ways**: While you mentioned good sleep quality, you may need to explore other forms of self-care to manage stress and anxiety. Take a break, practicing deep breathing exercises, or engaging in a hobby that brings you joy. Start with tiny steps, and gradually build up to more substantial self-care.
- **Be kind to yourself and acknowledge the challenges**: Remember that financial stress can be particularly challenging, especially when you have chronic illness. Acknowledge that it's okay to make mistakes, ask for help when you need it, and celebrate your small victories along the way.

Sammenligning med AI-genererede løsninger

Her vil vi sammenligne svar fra vores egen LLM samt ChatGPT, prompten vil være den samme.

Vores egen LLM:

--- Student #2 ---

Prompt:

You are a student mental health advisor. A student has the following profile:

- Stress Level: 0
- Depression Score: 3
- Anxiety Score: 0
- Sleep Quality: Average
- Social Support: Low
- Financial Stress: 3
- Uses Counseling Services: Occasionally
- Substance Use: Occasionally
- Has Chronic Illness: No

Based on this, give 2-3 bullet points of practical, compassionate mental health advice tailored to this student's situation.

Advice:

I'm here to offer some supportive and evidence-based guidance. Given your profile, here are three practical and compassionate tips tailored to your situation:

- **Acknowledge and validate your feelings**: It's essential to recognize that your stress level of 0 is often an illusion for many students. Recognize how you're edge these emotions without judgment, and remind yourself that it's okay to not feel this way all the time.

You might say to yourself: "I'm feeling really stuck right now, but I know that's normal. It's okay to not have everything under control."

- **Build a support network**: While you mentioned social support is low, there are other ways to connect with others and build a support system. Explore online rehallenges. You might also reach out to friends, family members, or a trusted teacher who can offer emotional support.

Consider joining a study group, either in-person or online, where you can connect with peers going through similar experiences.

- **Prioritize self-care and small wins**: It's easy to get caught up in managing stress, anxiety, and chronic illness, but it's crucial to remember that taking manageable chunks, and focus on achieving one thing at a time. Celebrate your small victories – even if they seem insignificant, they can build motivation and confid

For example, start by dedicating 10 minutes each day to stretching, meditating, or practicing deep breathing exercises. These tiny habits can have a significant im

Remember, taking care of your mental health is not a luxury but a necessity. Be kind to yourself, and don't hesitate to reach out for support when you need it.

ChatGPT:

Student 1

Profile Summary: Low stress, moderate depression and anxiety, good sleep, moderate social support, low financial stress, not using counseling or substances, no chronic illness.

- **Consider counseling services** even if symptoms seem manageable; early support can prevent escalation.
- **Engage in regular stress-reducing activities** like mindfulness, journaling, or light exercise to maintain balance.
- **Stay connected with your support system**, especially during periods of increased academic or emotional demand.

Delkonklusion

Ved at sammenligne svar fra vores lokale LLM og ChatGPT på den samme prompt, ses tydelige forskelle i sprog, struktur, og relevans af de råd, der gives.

Fordele ved vores lokale LLM:

- Mere empatisk tone: Den lokale LLM forsøger at bruge validerende og støttende formuleringer, som: "Be kind to yourself..."
- Mere detaljeret respons: Den leverer længere og mere forklarende råd med konkrete forslag (f.eks. "joining a study group" eller "10 minute meditation").
- Privat og offline: Kører lokalt uden data der forlader computeren – godt ift. følsomme oplysninger som mental sundhed.

Ulemper ved den lokale LLM:

- Mindre præcision og tydelighed: Teksten har grammatiske fejl og sætninger som: ("taking manageable chunks"), tyder på at modellen ikke er lige så stabil eller godt tunet som ChatGPT.
- Længere og mere rodet output: Svaret er lidt for langt og mister til tider fokus, det kan virke mindre professionelt.

Fordele ved ChatGPT:

- Klar, præcis struktur: Leverer tre korte og relevante bulletpoints med det samme.
- Professionel og fejlfri formulering: Ingen stavefejl eller sætninger der bliver afbrudt.
- Hurtigere forståeligt for brugeren: Let at læse og anvende.

Ulemper ved ChatGPT:

- Mindre empatisk: Tonen er mere klinisk og nøgtern, kan opleves mindre støttende.

- Generisk svar: Rådene virker lidt mere generelle og mindre tilpasset til den specifikke elevprofil.