

Deliverable 3

1. Final Training Results

The main model hasn't changed.

Those are training metrics from the last deliverable:

```
--- Epoch 299 Finished ---
Average Training Loss: 0.0369
Validation Top-1 Accuracy: 1.0000
Validation Macro F1 Score: 1.0000

Training complete. Model saved as 'disease_predictor_final.pt'
The epoch is: 300/300, the step is: 1/141, and the loss is: 0.0329

--- Epoch 300 Finished ---
Average Training Loss: 0.0370
Validation Top-1 Accuracy: 0.9029
Validation Macro F1 Score: 0.9490

Training complete. Model saved as 'disease_predictor_final.pt'
```

However, we have now included a chatbot script. The results aren't as good as we had hoped:

```
Chatbot ready! Type 'quit' to exit.
You: Hello world!!!!
Bot: 🤖 Hello! I'm an ML-powered medical assistant!

What symptoms are you experiencing?
(e.g., fever, cough, headache, fatigue, nausea)

You: I am feverish, coughing, head aching... it is a crazy world out there
Bot: Based on symptoms: **cough, fever**

📌 **ML Concept - MLP Forward Pass**
Symptoms → 10D vector → Hidden(128, ReLU) → Output(41, Sigmoid) → Probabilities

📊 **Predictions:**
1. Acne: 100.0% ██████████
2. Alzheimer's Disease: 3.6%
3. Appendicitis: 0.9%

💬 Ask 'compare models' or 'how does it work'

You: █
```

We will try to retrain the model, but right now it is not exactly obvious what the problem is.

2. Final demonstration proposal:

We will make a website frontend. It will be a chat box where the user can write their symptoms. It will be written in Flask, following the MAIS tutorial. We have yet to fully write the implementation, but the website's script foundation is there.