

Customer Journey Map

Example : Revolutionizing liver care: predicting liver cirrhosis using advanced machine learning techniques

Scenario	Entice	Enter	Engage	Exit	Extend
Using a machine learning tool to predict liver cirrhosis based on patient data	How does someone initially become aware of this process?	What do people experience as they begin the process?	In the core moments in the process, what happens?	What do people typically experience as the process finishes?	What happens after the experience is over?
Steps Collect patient medical data Upload it to the ML prediction tool (CSV/Excel) Tool processes and analyzes data Gets prediction (Yes/No for cirrhosis)	Discover the ML tool Click "Product" and view the Yes/No cirrhosis result Access Google Colab Upload a patient's Colab/health record Click "Product" and view the Yes/No cirrhosis result Click "Product" and view the Yes/No cirrhosis result	Upload or input new patient data Run the preprocessing step to clean input data Confirm input is valid and submit for prediction Receive output "Yes" (at risk) or "No" (not at risk) Form the next steps: Colab notebook or data app	Inputs are processed and validated Model prediction is displayed as "Yes" or "No" Understand a visual output as metrics, confusion matrix, model Additional patient info is gathered for confirmation	Doctor finishes reviewing model results and metrics Doctor reviews model results and metrics The prediction is added to the patient's health record Colab version of that app is closed Doctor is notified via email or text	Doctor follows up with the patient based on predicted outcome Analog outputs, such as a line graph, are displayed Patient outcome may be monitored and future predicted Risk is monitored for new patients or periodic checks Feedback is sent with the next recommendation item
Interactions What interactions do they have at each step? People: Doctor, healthcare analyst, patient (indirect) Places: Clinic, Hospital, or online (Colab / web app) Things: Colab notebook, Flask app (optional), patient record files	Medical lab or clinic workstation CSV/Excel files, Pandas/Jupyter in backend Results displayed in Python call or browser Feedback forms or suggestion box for their updates Interacts with model output, metrics, confusion matrix	Excel/CSV with patient test values Analyst, Doctor, ML Engineer or something in between Pandas, scikit-learn, trained ML model	Model errors pointed out (checked or if success) Visuals: Confusion matrix, classification report Doctor discusses output with colleagues Metrics help justify the predictions to stakeholders	Doctor wraps up with the tool (Colab/Flask) Output may be downloaded, printed, or monitored manually Patient is informed of the decision based on results Communication unit link to transfer information about the patient	Regular model results for other patients Shared discussions among doctors, analysts, researchers Reports may be generated or printed for medical records Research publications or case studies may be written Flask dashboard or Colab available for future cases
Goals & Motivations At each step, what is their goal? Help me catch liver cirrhosis early Help me avoid critical illness due to late detection Help me trust the result before taking clinical action	Help me catch liver cirrhosis early Help me avoid over-diagnosis or symptoms Help me recommend further tests or referrals	Help me process patient data without writing code Help me confirm the prediction is based on accurate data Help me move from analysis to diagnosis quickly	Help me understand how reliable the prediction is Help me explain the results to the patient clearly Help me make a documented, data-backed decision	Help me transition smoothly to next clinical steps Help me build confidence in AI/ML-assisted care	Help my hospital team adopt this in their daily workflow
Positive Moments What steps are enjoyable, exciting, or productive? Easy file upload and quick results High model accuracy builds trust Model gives clear Yes/No output Multiple algorithms evaluated automatically	Quick Yes/No prediction from model High accuracy & evaluation builds trust Confidence from ML support during decisions	Output is generated instantly Seeing high prediction reliability in results	System responds quickly with accurate output Doctor's task continues about recommending next steps	Prediction confirmed doctor's intuition Patient care feels more informed and supported	Useful for ongoing studies and research analysis Integration into electronic medical records (EMR) is explored
Negative Moments What steps are frustrating or confusing? Input format confusion (wrong CSV layout) Complex model metrics (F1-score, confusion matrix) for non-technical users Requires internet if run in Colab No visual explanation of how the model predicts	No immediate error handling if a value is missing Doctors may feel F1-score or recall unclear Lacks report in print unless connected manually	Fear of relying only on the ML model without human check	If multiple models are shown, it may be confusing Complex metrics like F1-score, recall, precision, etc. are not explained	No option to save/export the results as a report Lack of a "summary page" may confuse non-technical users	No saving of decision based post prediction
Areas of Opportunity How might we improve the process? Add toolkits and example templates for CSV upload Build a simple, clean web UI (Flask or Streamlit) Add color-coded prediction output (green = safe, red = risk)	Provide video tutorial for each metric, including recall Add multilingual or regional support Offer mobile-optimized version for tablets in clinics	Offer integration or output to use external tools	Offer integration or output to use external tools	Provide an example template for CSV upload (Flask or Streamlit) Automatically save the data as a report or PDF Offer a feedback button to log staff if struggle at the end	Offer an explanation or visual output reports Offer interactive tooltips or updates