	classmate
	Date
	N P L O L O L T L L T .
	Mini Broject Report: Refect Type Brediction using Multi Layer Rerceptron.
	using Mulli Layer Tercegbron.
	Overview:
	This brageit involves building a markine learning pipeline to predict defect types from manufacturing inspection data.
	pipeline to predict defect types from
	manufacturing enspection data
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	with streamlit los predictions of the
	The solution uses tensorflar (kerus, integrated with streamlit for fredictor, and autorated using bithub actions for CIICD
	Steps involved:
1),	The state of the s
1/*	Pata Creperation and Creprocessing:
đ	Loaded Manufacturing defects all data with multiple features: Cleaned the data and ferformed are hot encoding on categorical variables using fundas. get dunies
- 00	believes:
*	clared the data and flordand and hat cont
	or categorial variables using franching
	Jest danies
*	Use [standard Sealer] to normalize the inent
	Use [standard Sealer] to normalize the inject platures.
2)	Model P. O. I is
	Model Building and training:
	Build a multi-law Con to CM 22
	Build a multi-layor Perceptron (MLP) model using Keras with 2 hidden layours. (64 and B? units).
	(and is it muss)

used categorical cross entropy loss and Adam
optimizer
split the data into truning and test alo
and train the model for Step 3: Building MI flow: I also used MI flaw steps to develop artifacts in an mel flaw experiment which the required metrics to virtualize the result in ML flaw UI. Step 4: Model Saving and Serving: Saved the Trained rodel mly model hy with the freprospsing tools. Created a streamlit app to achieve real-time interaction with users using simple UI. Step 5: Cithul Actions Automations: Set up a lython environment Trotalled dependencies from requirements. test Run pini project fy automatically on push! Key learnings from project:

A Learned how to build and deploy a ML pipeline
from data preprocessing to sa display with streaslit

A list CI/P to autorate ML development using
Cithrib actions

* Used ML flow to log parameters metrics and
artifacts for better experiment tracking and
reproductivity: