



Predicting Tool Wear and Surface Roughness for a Lathe Machine

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Nirma University

Under Mentorship of
Shridhar

IITD-AIA FOUNDATION FOR SMART MANUFACTURING



Objectives

Objectives	Achieved / In-process / Planned	% Completion
Learning about Deep Learning Techniques	In-progress	80%
Learning about PyTorch Library	Achieved	90%
Learning about Lathe Machine and its Parameters	Achieved	100%
Learning about Predictive Maintenance	Achieved	100%
Learning about Neural Networks	Achieved	80%
Pre-Processing and Feature Engineering	Achieved	80%
Learning about NumPy and Pandas	Achieved	100%
TensorFlow Library	Achieved	80%
Scikit-Learn	Achieved	80%
Dataset analysis and its Preprocessing	Achieved	60%
Model Selection and Training	In-progress	20%
Optimisation	Planned	0%
Performance evaluation	Planned	0%
Cloud computing	Planned	0%
Deployment	Planned	0%
Final Testing	Planned	0%

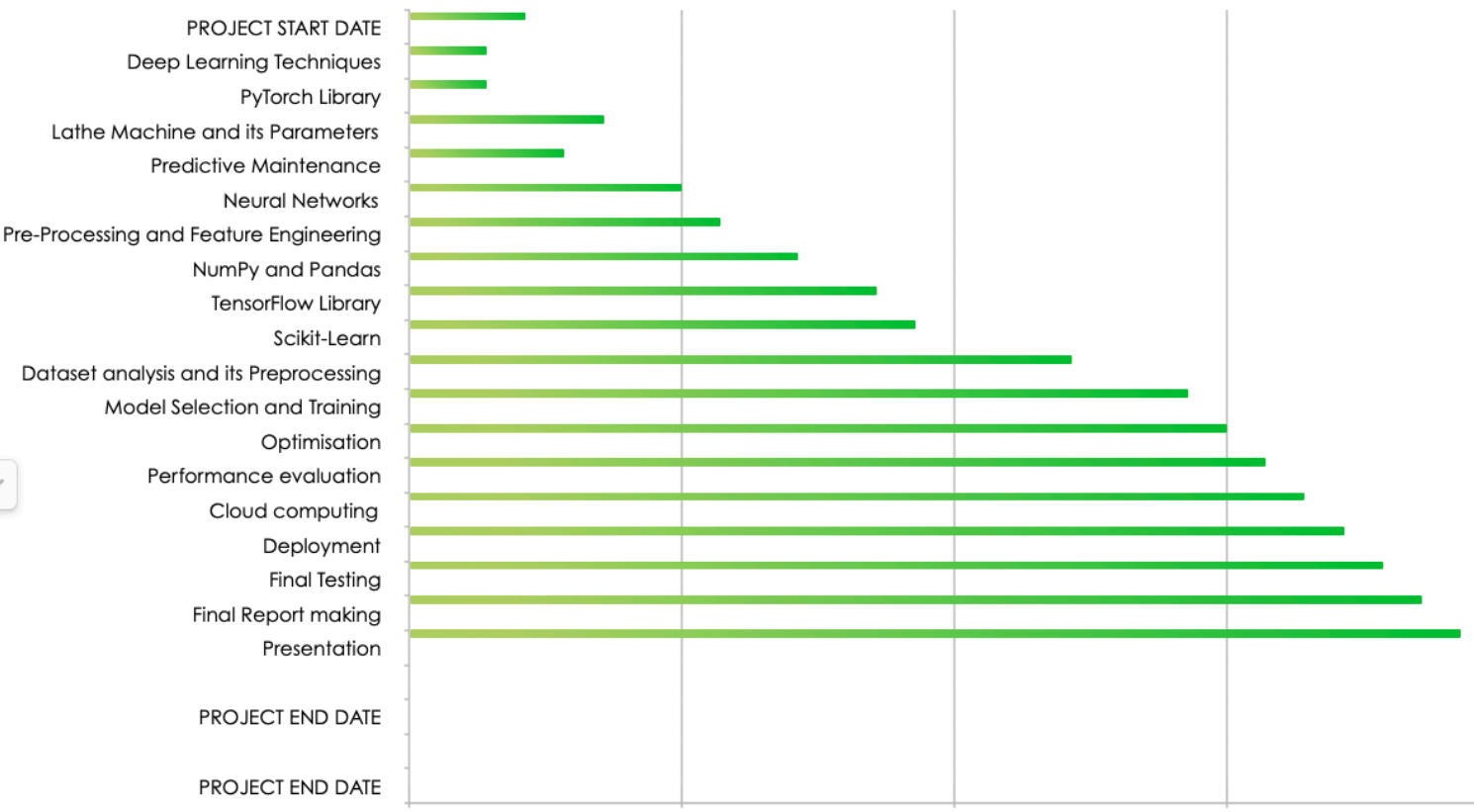


Timeline - Gantt chart

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PROJECT NAME	START DATE	END DATE		% of PROGRESS
IITD AIA-FSM	8-Jun			30%
PROJECT MANAGER				
Princy Patel				

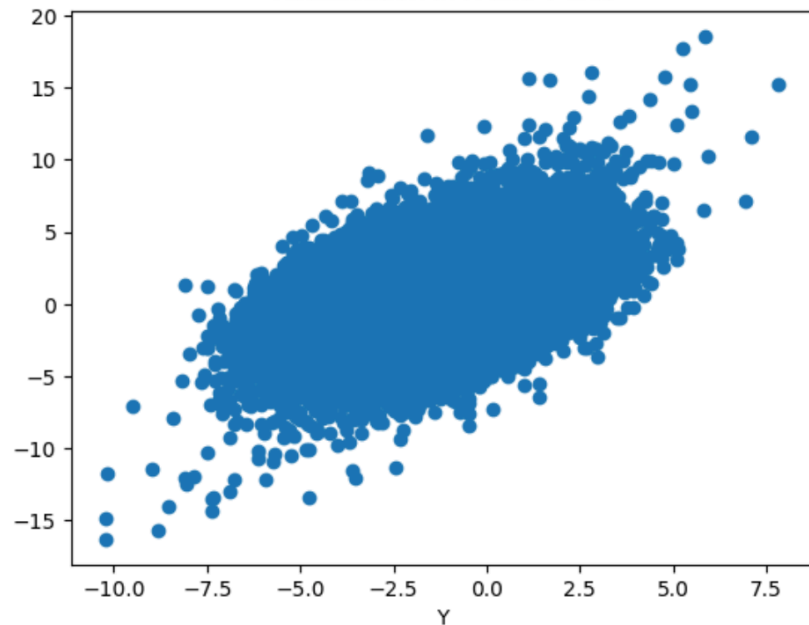
TASKS	START	END	DAYS		STATUS
PROJECT START DATE	8 Jun 2023				
Deep Learning Techniques	9 Jun 2023	12 Jun 2023	3	75%	In Progress
PyTorch Library	11 Jun 2023	12 Jun 2023	1	100%	Complete
Lathe Machine and its Parameters	13 Jun 2023	15 Jun 2023	2	100%	Complete
Predictive Maintenance	13 Jun 2023	14 Jun 2023	1	100%	Complete
Neural Networks	16 Jun 2023	17 Jun 2023	1	70%	In Progress
Pre-Processing and Feature Engineering	17 Jun 2023	18 Jun 2023	1	80%	In Progress
NumPy and Pandas	18 Jun 2023	20 Jun 2023	2	100%	Complete
TensorFlow Library	20 Jun 2023	22 Jun 2023	2	70%	In Progress
Scikit-Learn	22 Jun 2023	23 Jun 2023	1	80%	In Progress
Dataset analysis and its Preprocessing	24 Jun 2023	27 Jun 2023	3	70%	In Progress
Model Selection and Training	28 Jun 2023	30 Jun 2023	2	20%	Needs Review
Optimisation	29 Jun 2023	1 Jul 2023	2		Not Started
Performance evaluation	30 Jun 2023	2 Jul 2023	2		Not Started
Cloud computing	1 Jul 2023	3 Jul 2023	2		Not Started
Deployment	2 Jul 2023	4 Jul 2023	2		Not Started
Final Testing	3 Jul 2023	5 Jul 2023	2		Not Started
Final Report making	4 Jul 2023	6 Jul 2023	2		Not Started
Presentation	5 Jul 2023	7 Jul 2023	2		Not Started



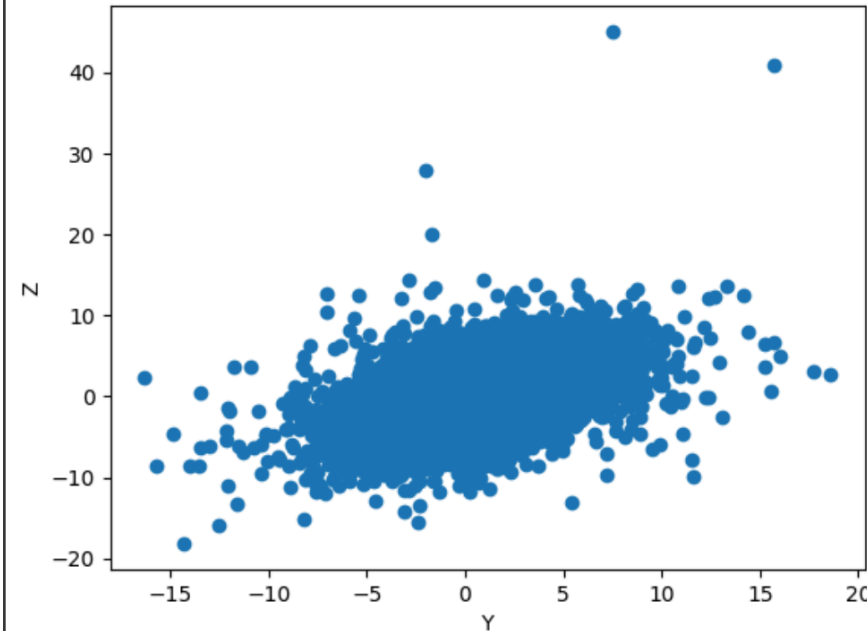
PROJECT END DATE					
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Screenshots of development

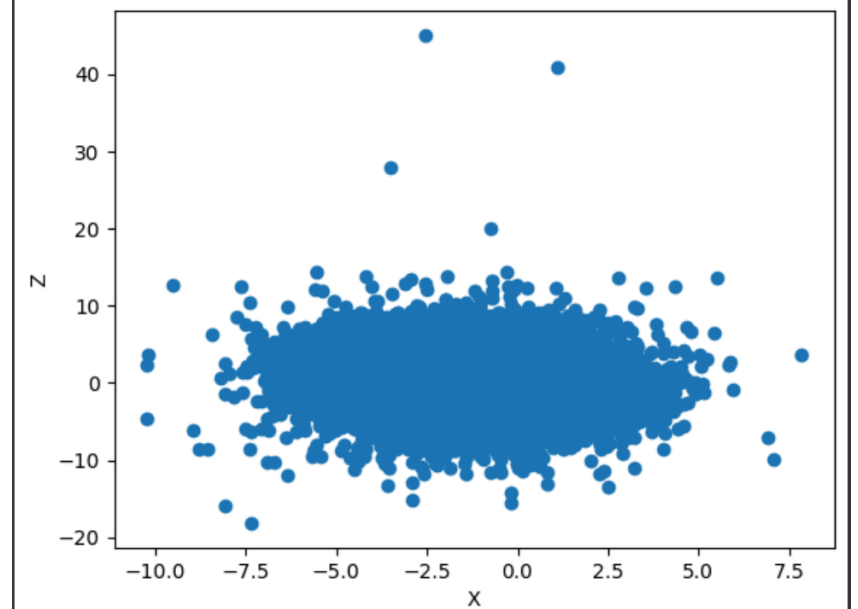
Visualisation in X and Y axis



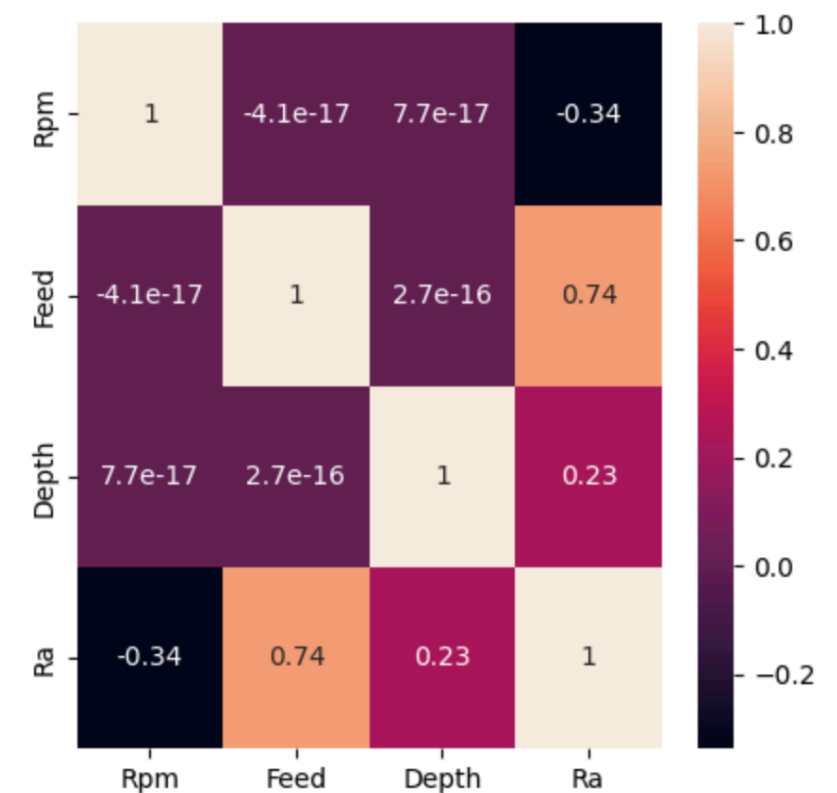
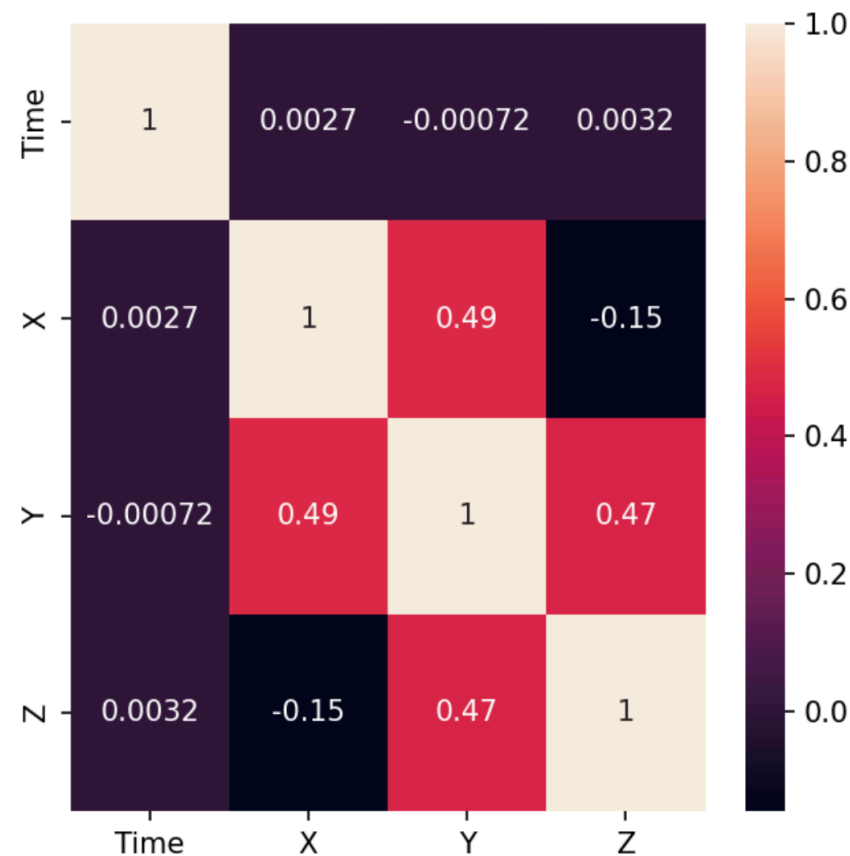
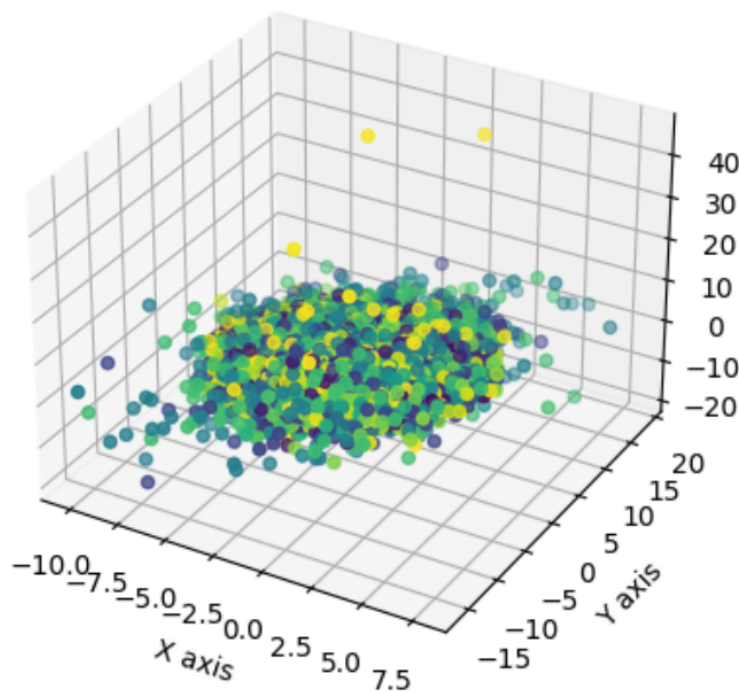
Visualisation in Y and Z axis



Visualisation in X and Z axis



Visualisation of data in 3 dimensions





Thank You

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