Unlocking the Art of Writing

Analyzing Behavioral Patterns for Enhanced Writing Quality Assessment

Introduction

- Analyzing writing behaviors
- Complex Process
- Involves multitude of actions and cognitive activities
- Hidden dynamics behind writing

Have you ever wondered if those small actions, pauses, and revisions could be the key to enhance writing quality?

Problem Statement

Does typing behavior effect the outcome of an essay?

The Team

2

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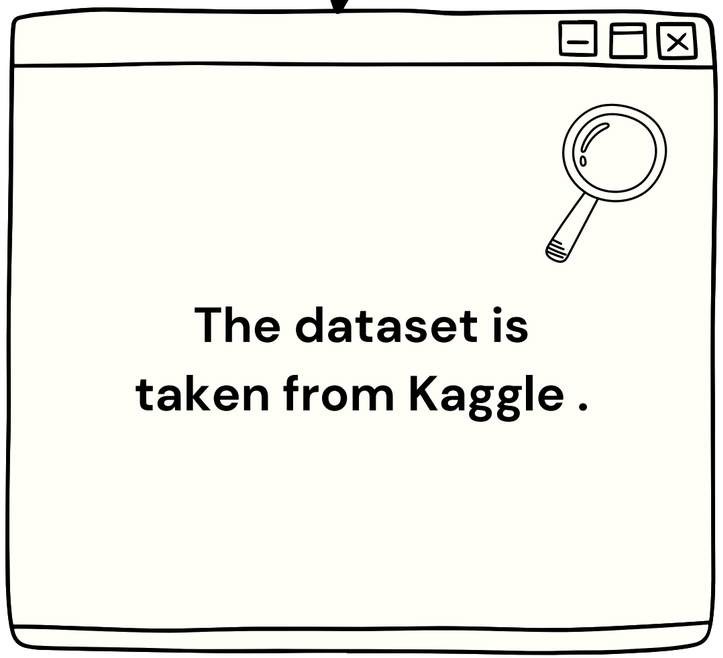
Project Manager/ Data Scientist

Sowmya Bathula
Data Engineer

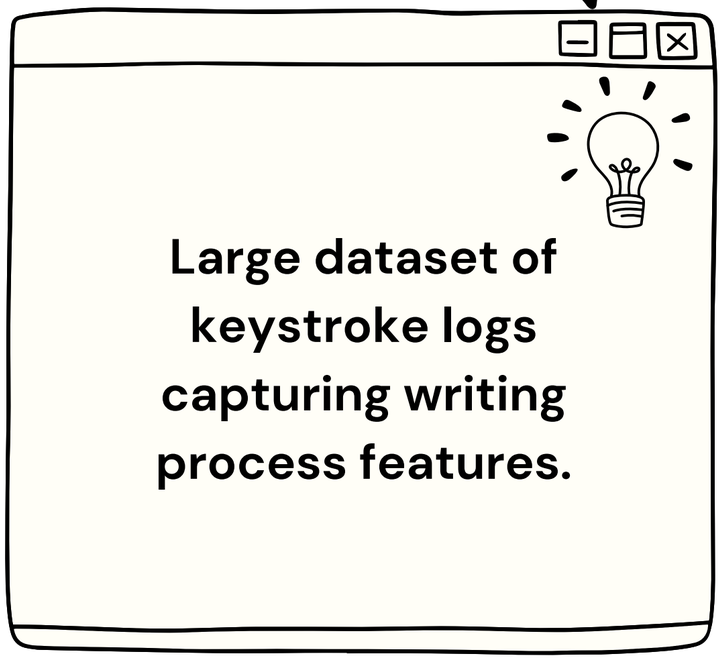
Harshitha G.S.
Data Analyst

Shaagun Suresh
ML Engineer

Data Source and Distribution

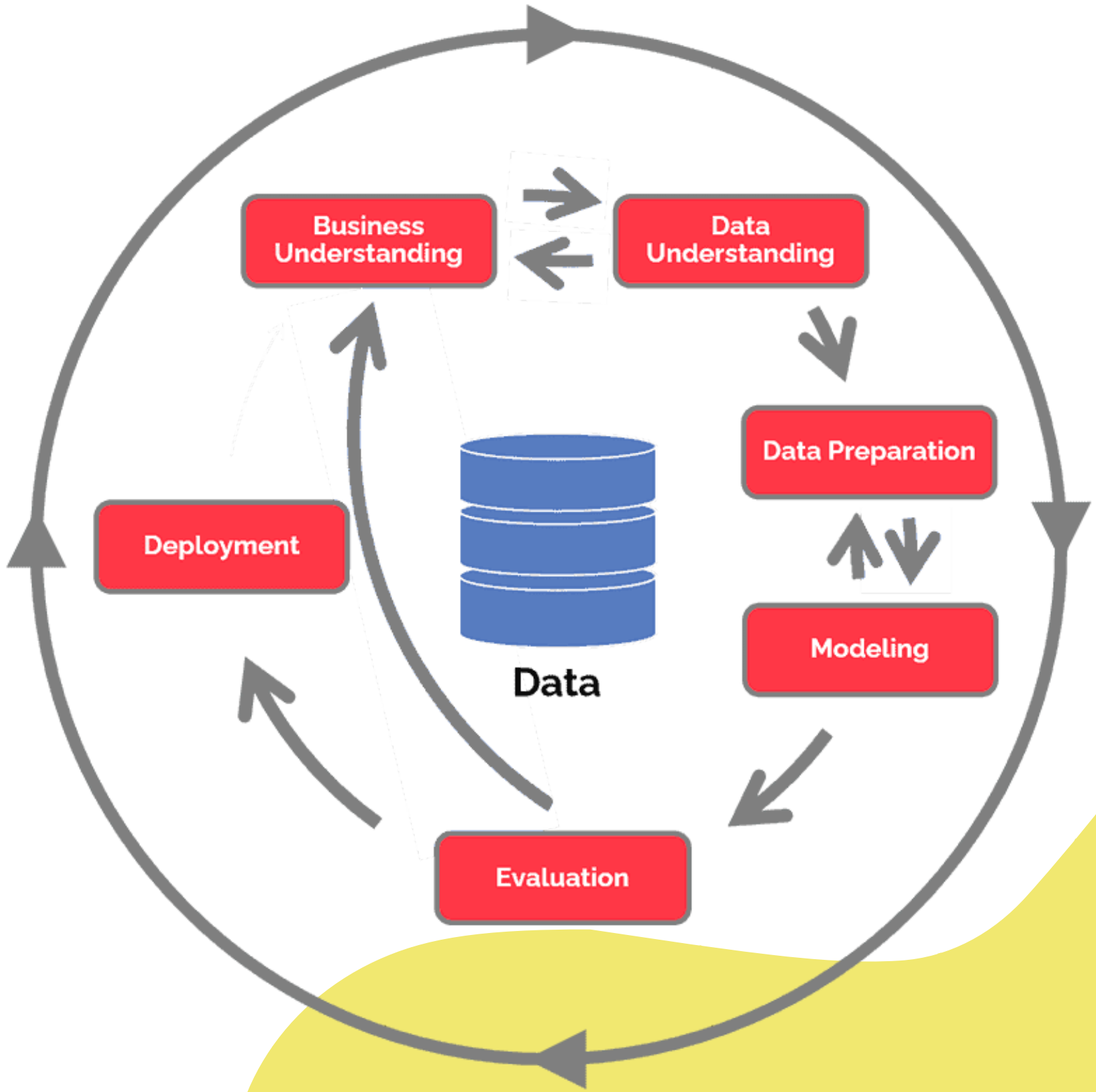


The dataset is taken from Kaggle .



Large dataset of keystroke logs capturing writing process features.

CRISP-DM METHODOLOGY



BUSINESS UNDERSTANDING

Why do we care ?

1

Empowering Intelligent Tutoring and grading Systems

- Supporting educational institutions in optimizing teaching methods.
- Enhancing students' writing skills and learning outcomes.

2

Skill Assessment

- Offering a comprehensive tool for assessing and improving various skills
- Empowering individuals to enhance their abilities and reach their potential.

3

Aiding Educational and Research Institutions

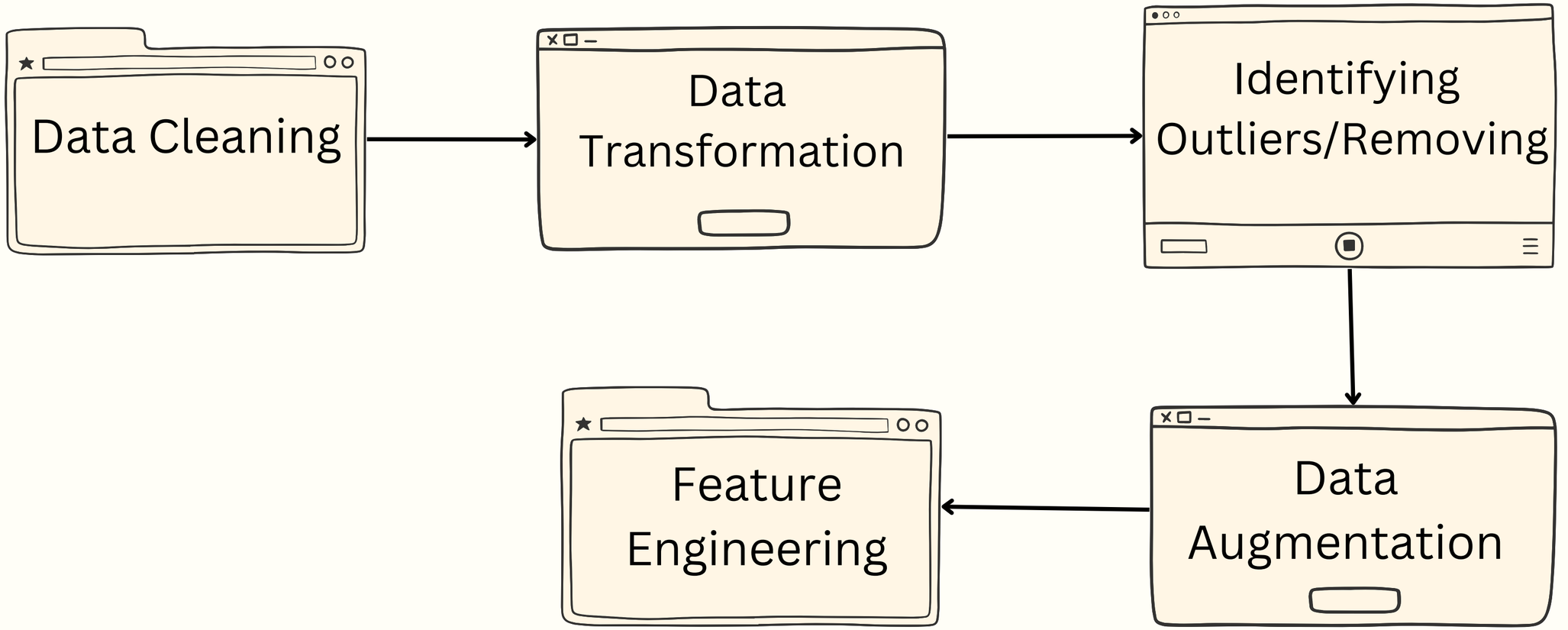
- Fostering cross-disciplinary research with global impact.

DATA UNDERSTANDING

```
df.head(10)
```

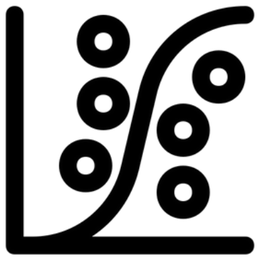
	id	event_id	down_time	up_time	action_time	activity	down_event	up_event	text_change	cursor_position	word_count
0	001519c8	1	4526	4557	31	Nonproduction	Leftclick	Leftclick	NoChange	0	0
1	001519c8	2	4558	4962	404	Nonproduction	Leftclick	Leftclick	NoChange	0	0
2	001519c8	3	106571	106571	0	Nonproduction	Shift	Shift	NoChange	0	0
3	001519c8	4	106686	106777	91	Input	q	q	q	1	1
4	001519c8	5	107196	107323	127	Input	q	q	q	2	1
5	001519c8	6	107296	107400	104	Input	q	q	q	3	1
6	001519c8	7	107469	107596	127	Input	q	q	q	4	1
7	001519c8	8	107659	107766	107	Input	q	q	q	5	1
8	001519c8	9	107743	107852	109	Input	q	q	q	6	1
9	001519c8	10	107840	107978	138	Input	Space	Space		7	1

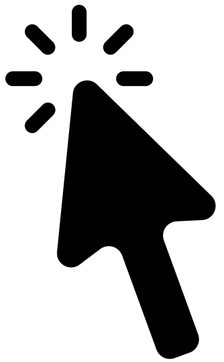
DATA PREPARATION



Modeling

- Using various traditional and non-traditional ML algorithms
- Using regression as well as classification approach
- Logistic regression, random forests, decision tree, SVM, KNN, Linear regression etc.
- Neural Networks, NLPs, deep Learning etc.

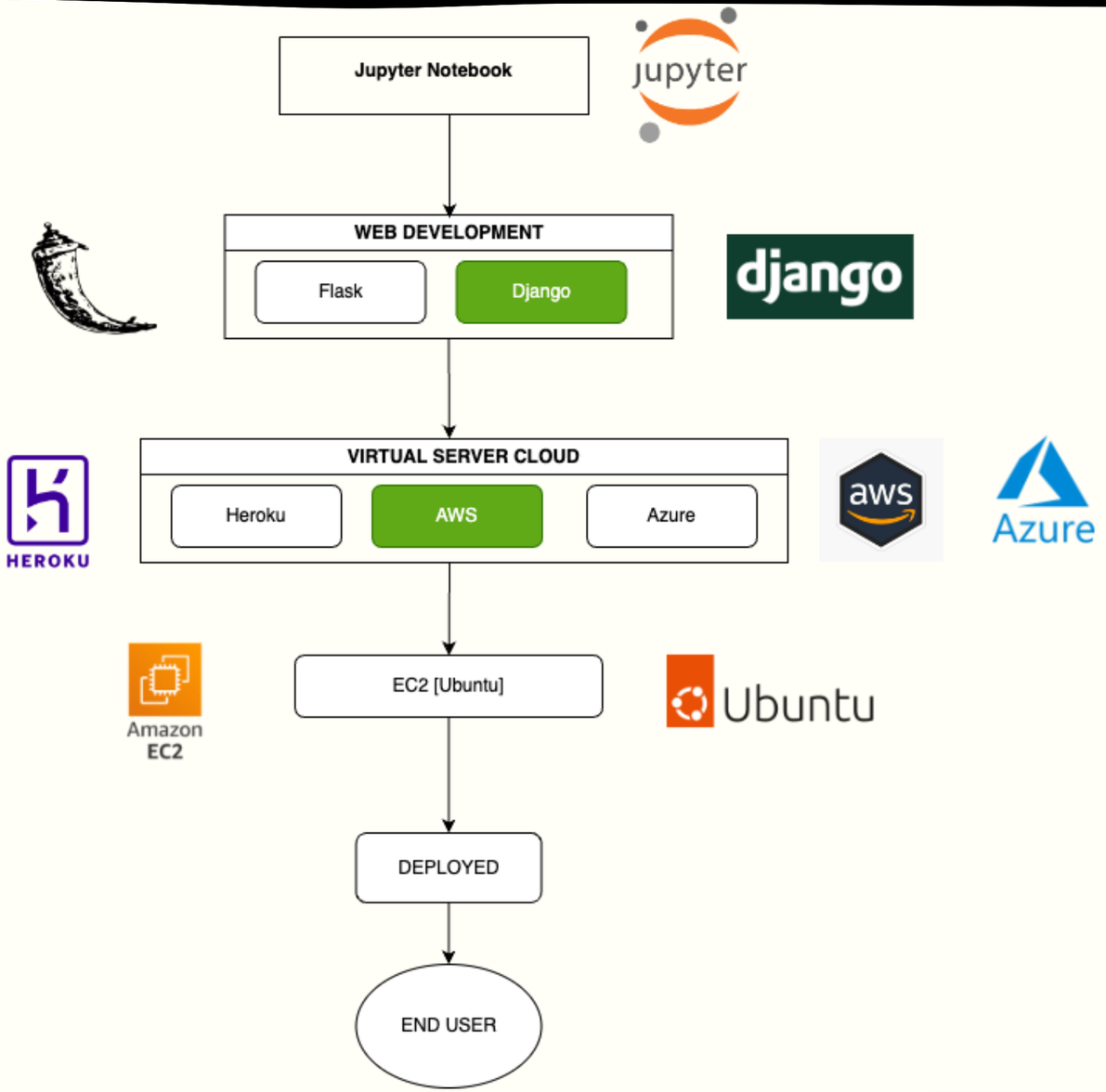




EVALUATION

Evaluate results

DEPLOYMENT


Jupyter Notebook
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DEPLOYED
END USER

Any Questions ?


Thank you