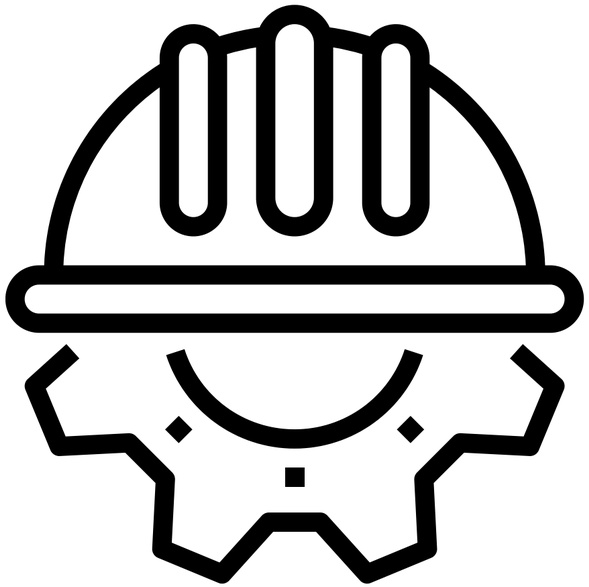

SUDO-i
ELEVATE THE ART OF ENGINEERING
IEEE
COMPUTER
SOCIETY
Mansoura Student Branch Chapter
END TO END DATA PROCESS
ENG MARYAM SHERIF

BRIDGING THE GAP BETWEEN DATA ENGINEERING AND DATA SCIENCE



VS

AGENDA

- INTRODUCTION TO DATA ENGINEERING & DATA SCIENCE
- THE RELATIONSHIP BETWEEN DE & DS
- COMMON MISCONCEPTIONS
- CHALLENGES IN COLLABORATION
- BEST PRACTICES FOR A SEAMLESS AI WORKFLOW
- AI CASE STUDIES & REAL-WORLD EXAMPLES
- HANDS-ON SESSION
- FUTURE TRENDS & OPEN DISCUSSION

INTRODUCTION TO DATA ENGINEERING & DATA SCIENCE

WHAT IS DATA ENGINEERING?

PostgreSQL

Apache Airflow

docker

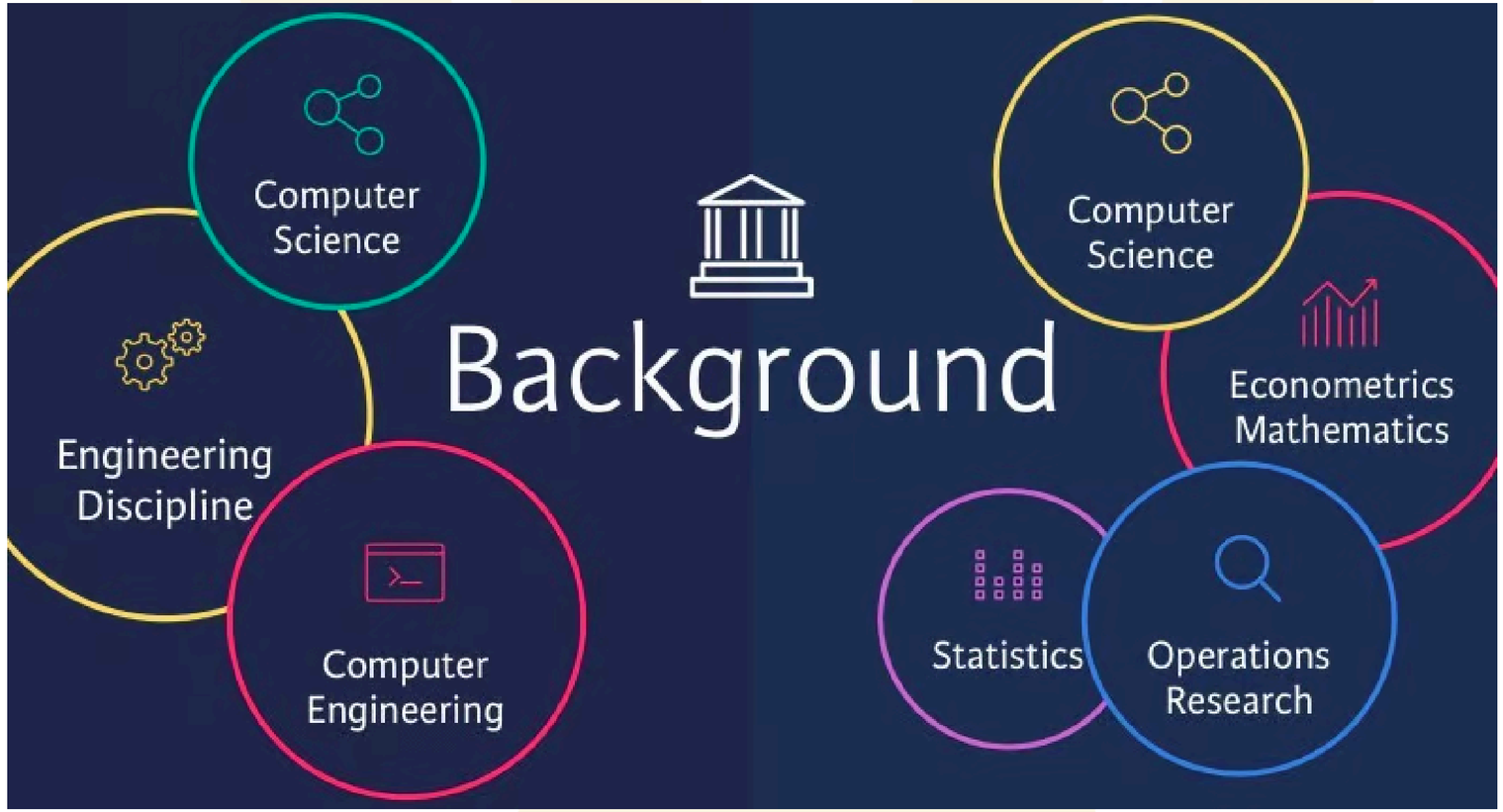
dbt

INTRODUCTION TO DATA ENGINEERING & DATA SCIENCE

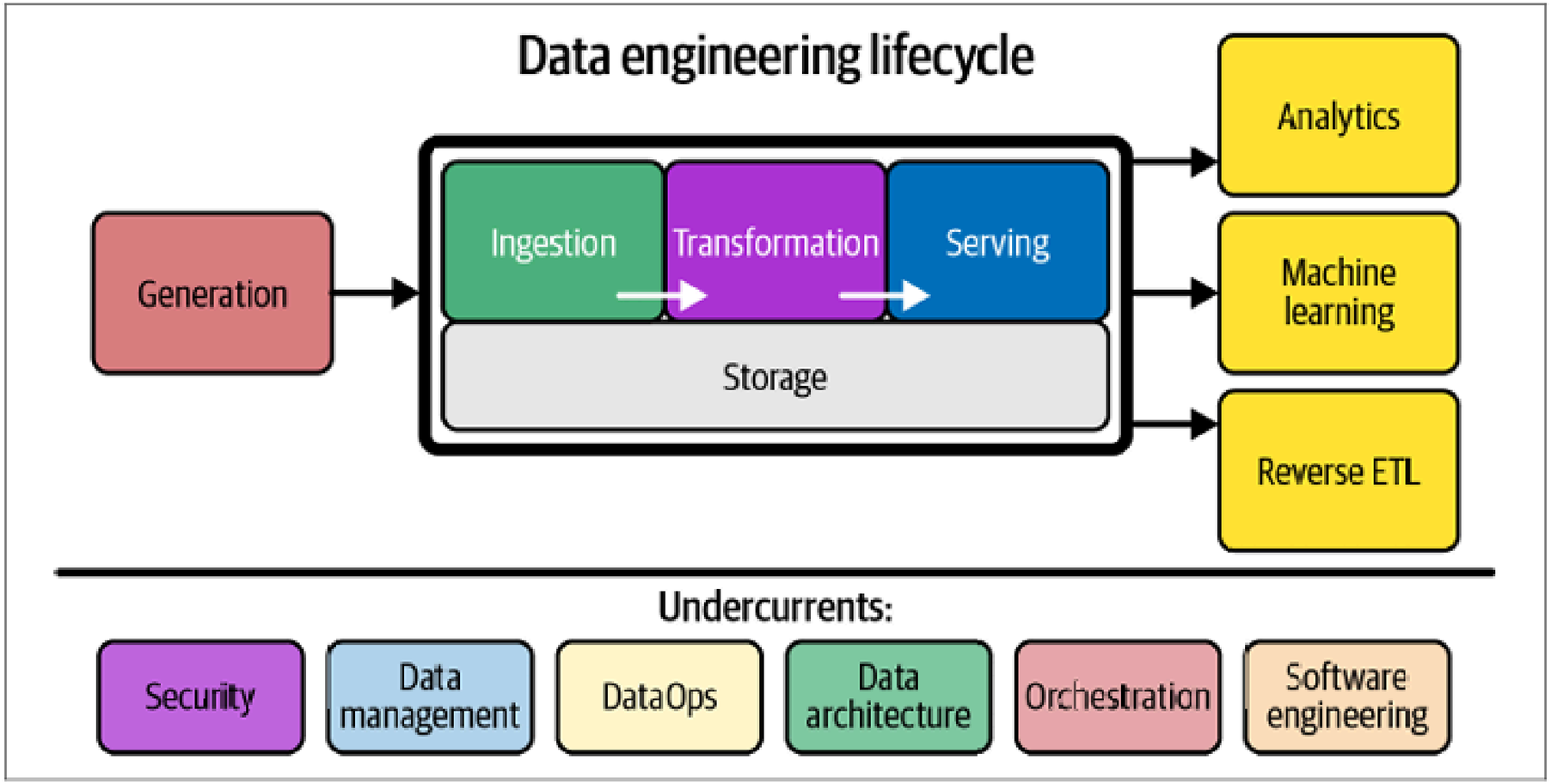
WHAT IS DATA SCIENCE?

DATA SCIENCE VS DATA ENGINEERING: RESPONSIBILITIES

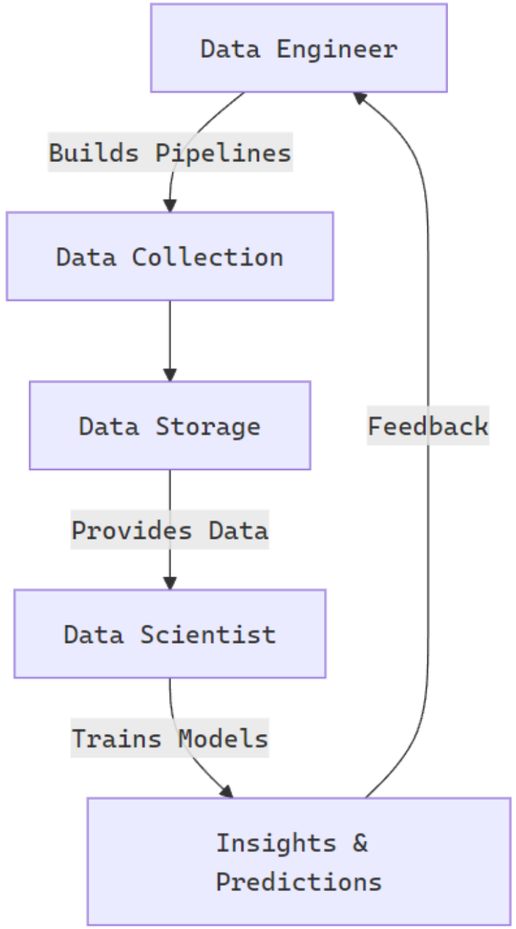
DATA SCIENCE VS DATA ENGINEERING: EDUCATIONAL BACKGROUND



THE DATA ENGINEERING LIFECYCLE

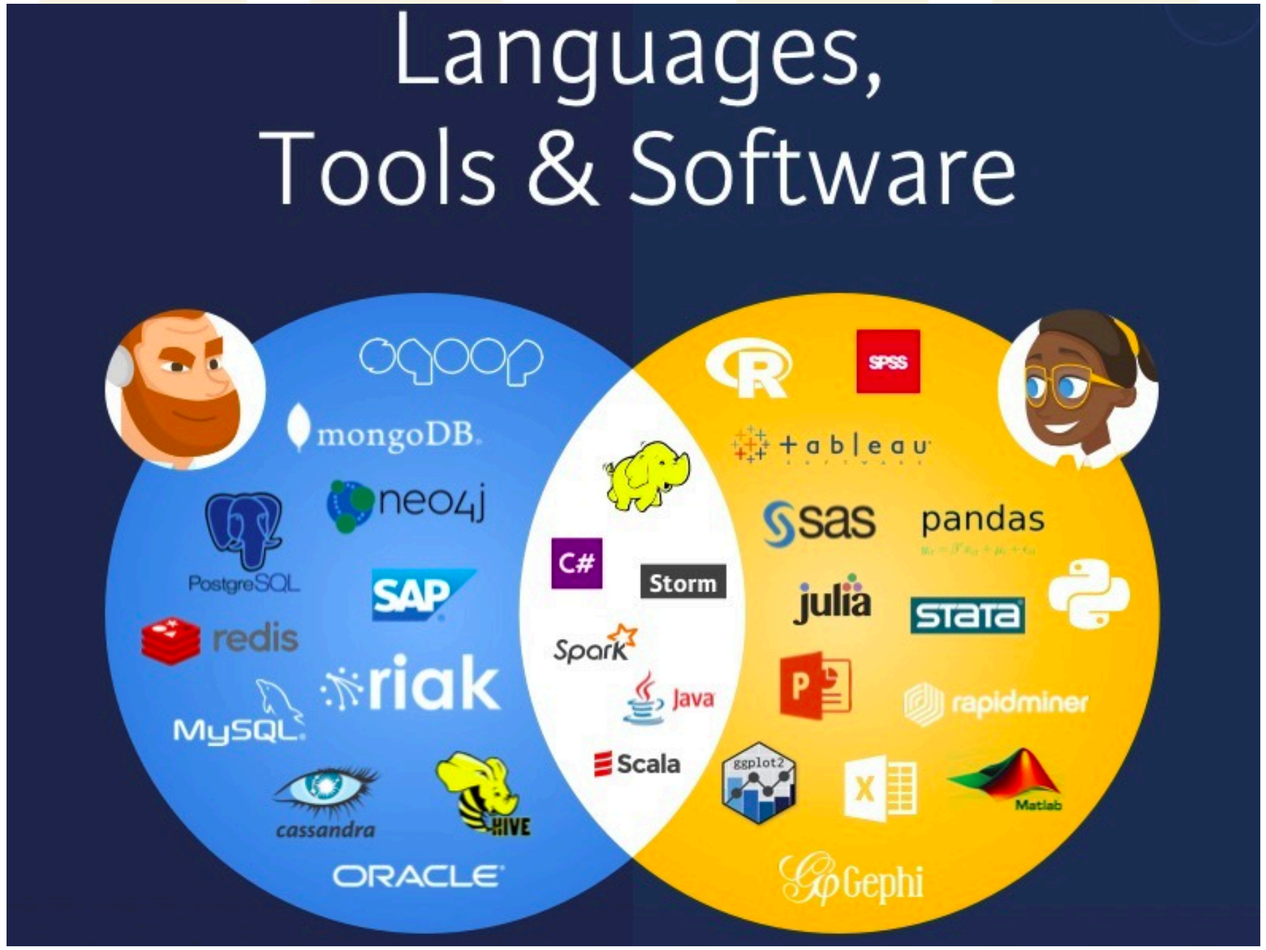


THE DATA ENGINEERING LIFECYCLE



"DES ENSURE DATA IS USABLE (CLEAN, STRUCTURED, ACCESSIBLE). DSS ENSURE DATA IS USEFUL (INSIGHTS, PREDICTIONS)."

DATA ENGINEERING VS DATA SCIENCE



COMMON MISCONCEPTIONS

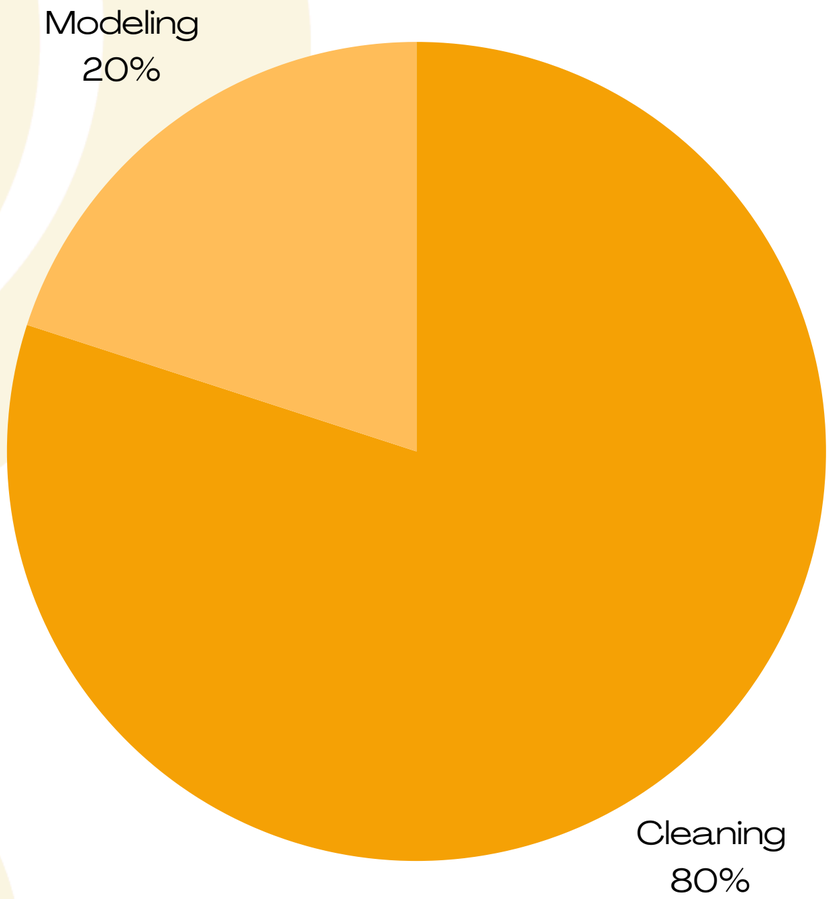
DATA ENGINEERING MYTHS

- "DES JUST WRITE SQL AND ETL SCRIPTS."
- "DES DON'T NEED SOFTWARE ENGINEERING SKILLS."
- "DE WORK IS DONE ONCE THE PIPELINE IS BUILT."

COMMON MISCONCEPTIONS

DATA SCIENCE MYTHS

- "DS IS ALL ABOUT TRAINING FANCY MODELS."
- "DSS CAN WORK IN ISOLATION."
- "MORE DATA = BETTER MODELS."



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CHALLENGES

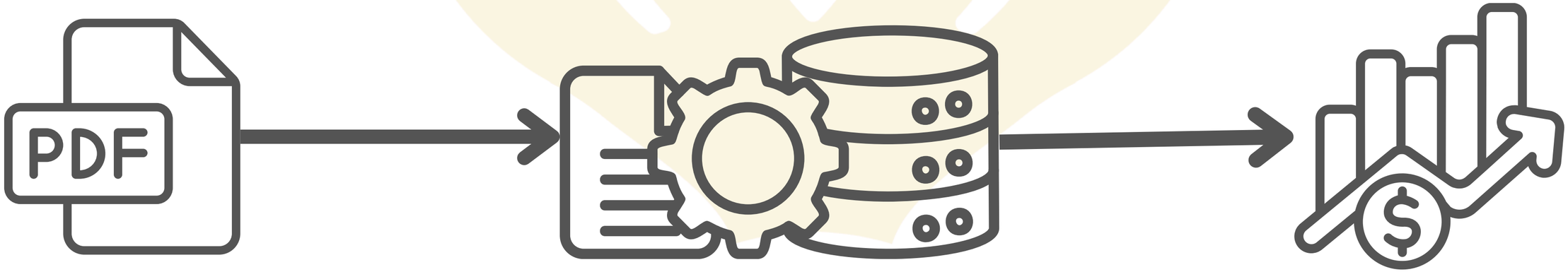
COMMUNICATION GAPS

PREFERRED TOOLS

ITERATIVE PROCESSES

LET'S TAKE A BREAK

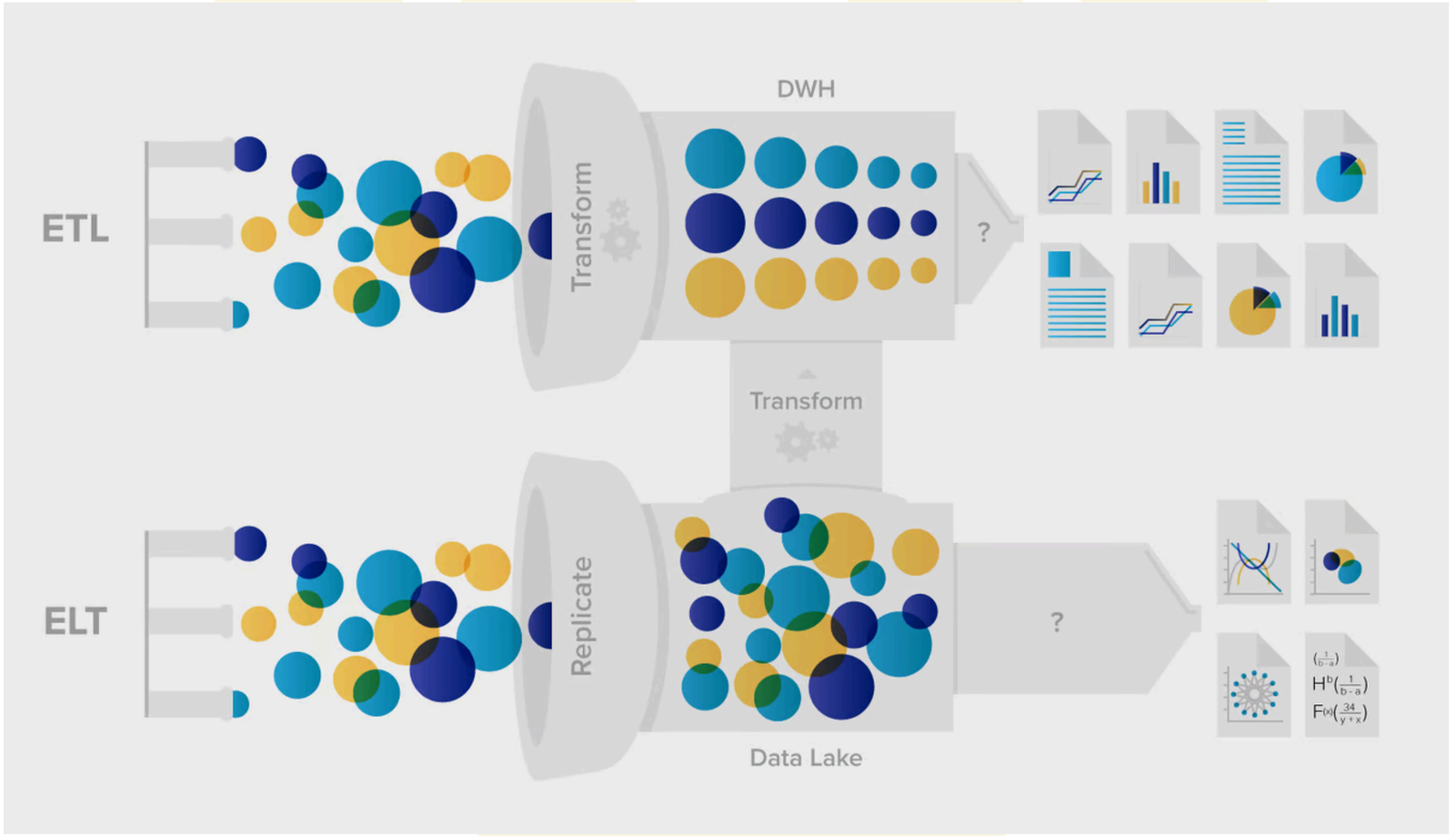
USE CASE



DATA WAREHOUSE VS DATA LAKE

HOW TO CHOOSE BETWEEN THEM

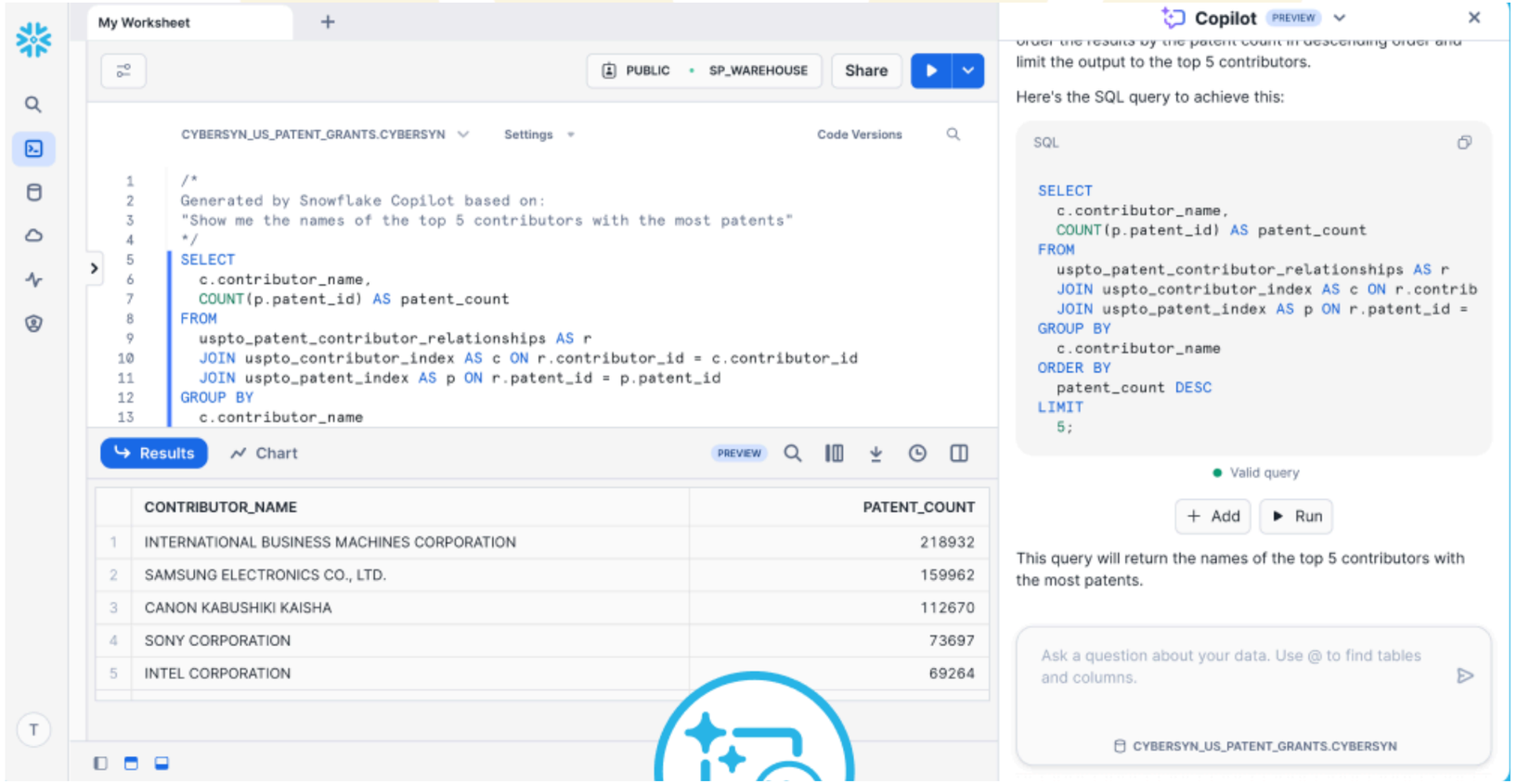
ETL VS ELT



LET'S BUILD OUR PIPELINE

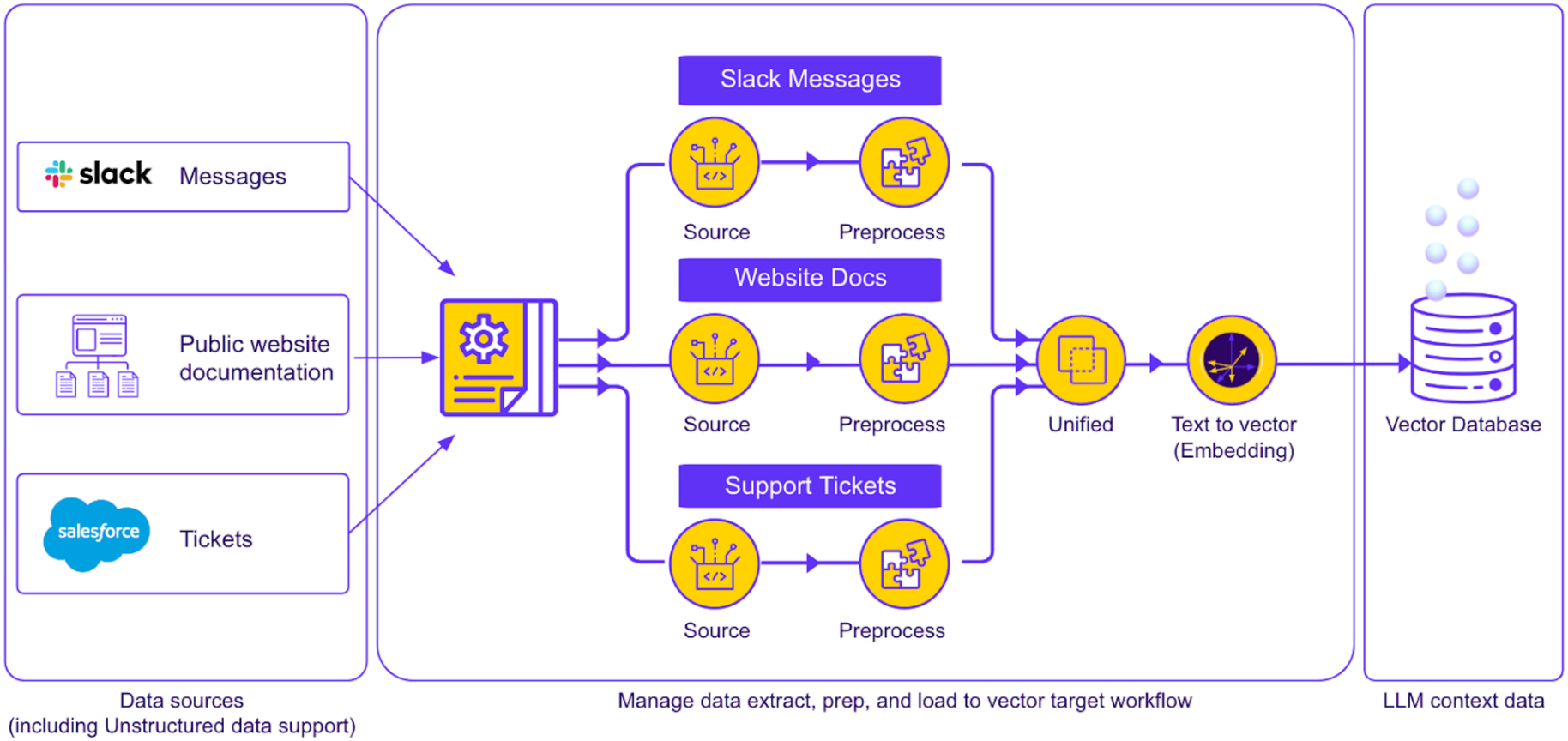
FUTURE TRENDS

LLMS WILL REVOLUTIONIZE DATA STACKS



FUTURE TRENDS

LLMS WILL REVOLUTIONIZE DATA STACKS



DISCUSSION TIME

REFERENCES

YOU WILL FIND ALL OF THE RESOURCES HERE

- OBSIDIAN NOTE FOR THE REFERENCES
- GITHUB REPO AND DOCUMENTATION

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THANK YOU

FOR LISTENING

ANY QUESTIONS ?