COMP-432: Machine Learning

Fall 2025

Concordia University

About the lab

Week 1 PPT

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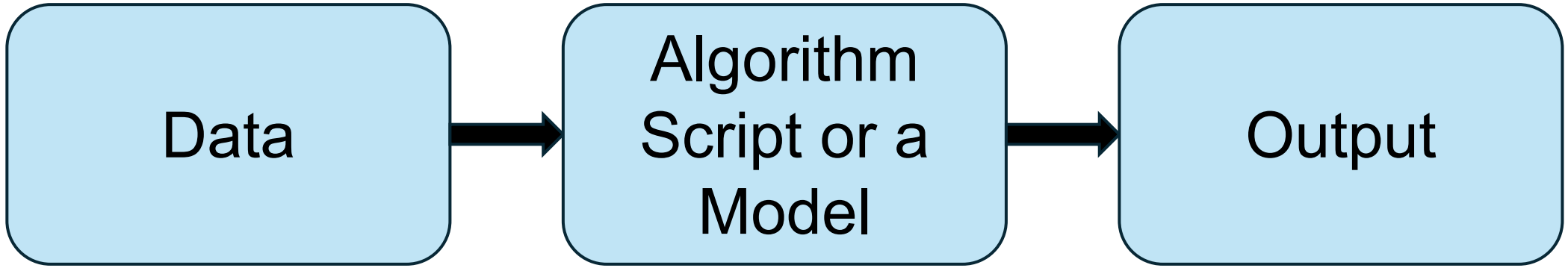
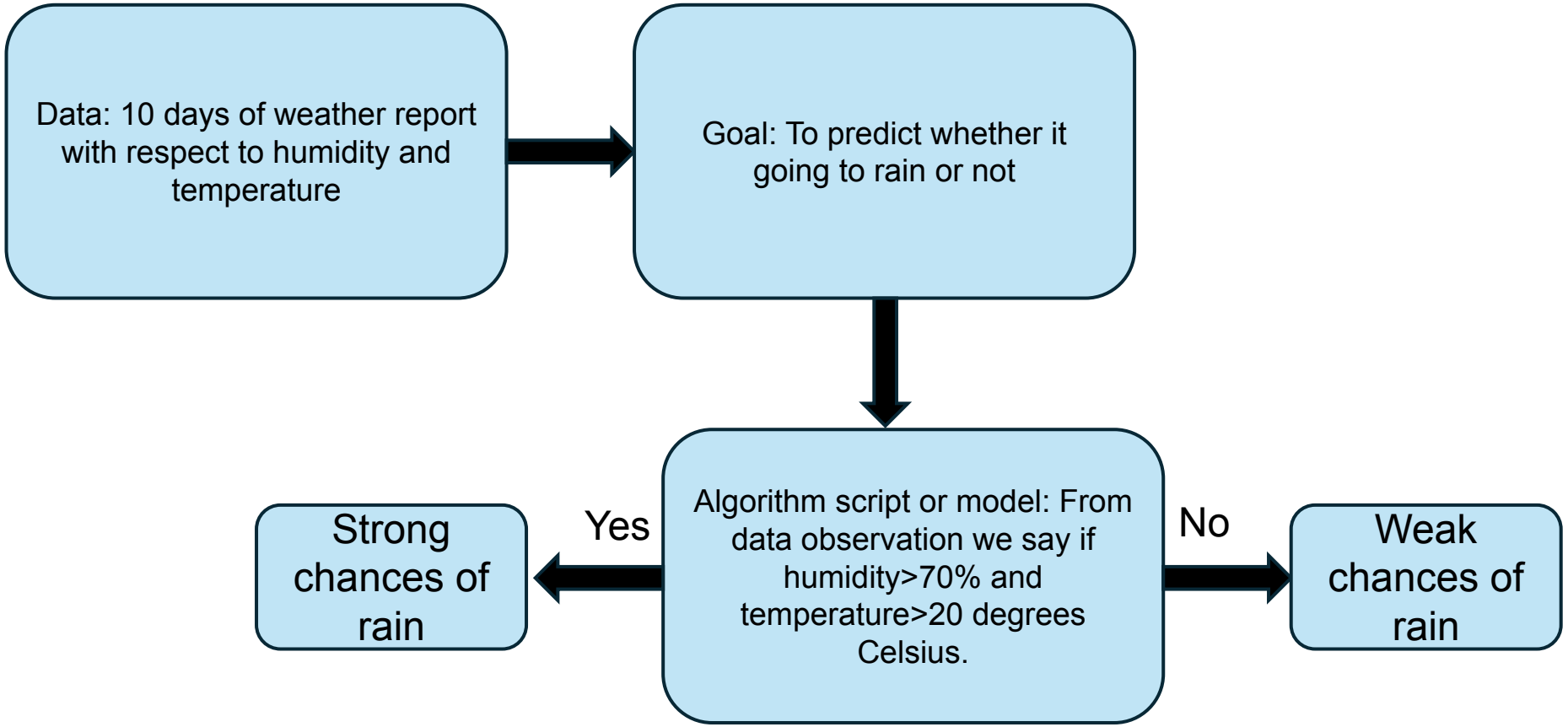
What is Machine Learning



Example

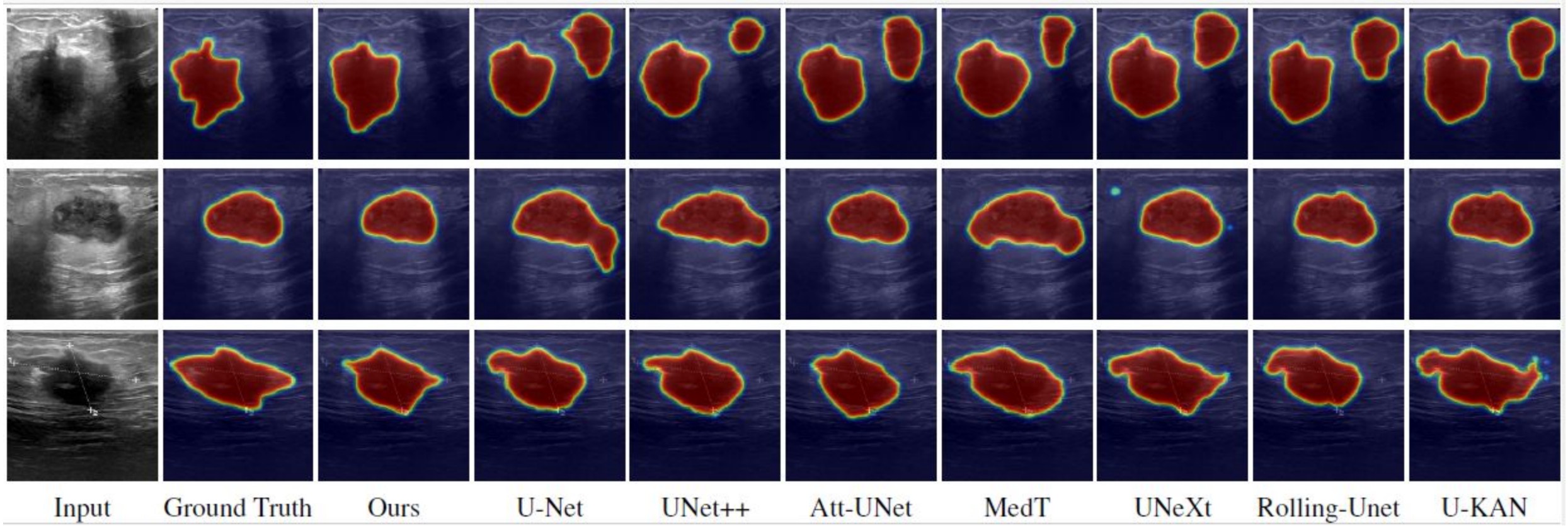


ML in real Life

ML in real Life

- Healthcare
- Recommendation Systems
- Finance
- Self Driving Cars

Examples from My project



Some Requirements

- Basic Python Programming
- Basic Understanding of Math Algebra
- Basic Statistics understanding

Python Installation

Use Anaconda install for Python

For some basic implementation can also try Google colab

Some important Libraries

- **NumPy** – numerical computing, arrays, linear algebra
- **Pandas** – data handling, cleaning, tabular datasets
- **Matplotlib / Seaborn** – data visualization
- **Scikit-learn (sklearn)** – classical ML algorithms (LogisticRegression, Decision Trees, etc.)
- **PyTorch** – deep learning framework (neural networks, GPU support)

Python Library Basics

- Basic Operations from Numpy
- Basic Operations from pandas
- Basic operations from Matplotlib
- Basic Operations from pytorch
- Basic Operations from Scikit-learn

Math Review

Probability Concepts

Linear Algebra

Thank
You