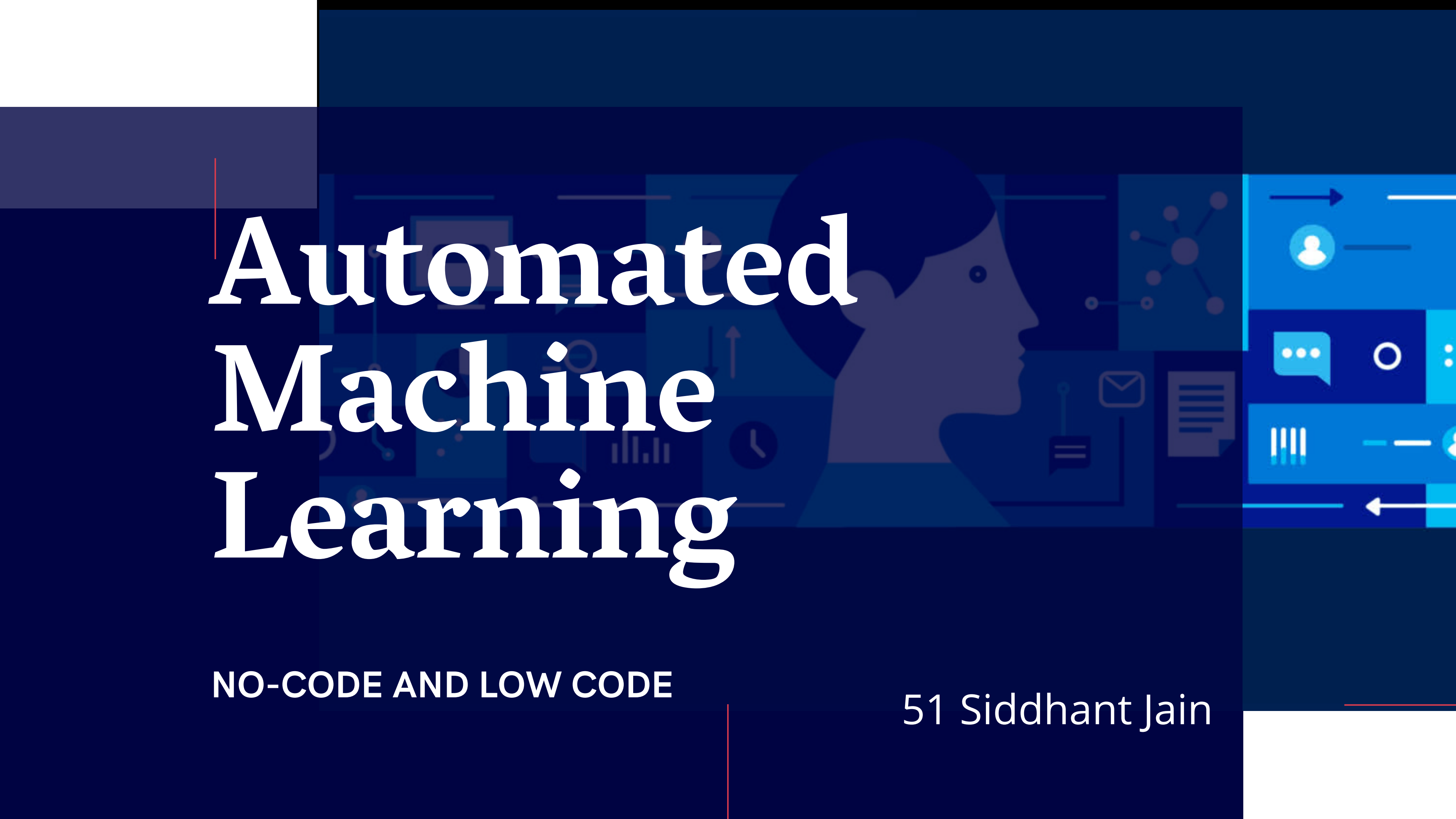


Automated Machine Learning



NO-CODE AND LOW CODE

51 Siddhant Jain



**83% of businesses say AI is a
strategic priority for their
businesses today**

However

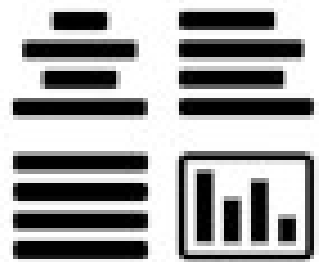
**There is not enough data
science talent.**

**Demand for AI talent has
doubled in the last two years.**

-FORBES REPORT



Aspects of AutoML



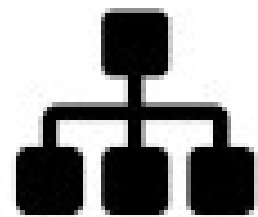
Data Preprocessing

- IMPUTATION, ONE-HOT ENCODING, STANDARDIZATION
- FEATURE SELECTION AND/OR FEATURE EXTRACTION (E.G. PCA)
- COUNT/LABEL/TARGET ENCODING OF CATEGORICAL FEATURES



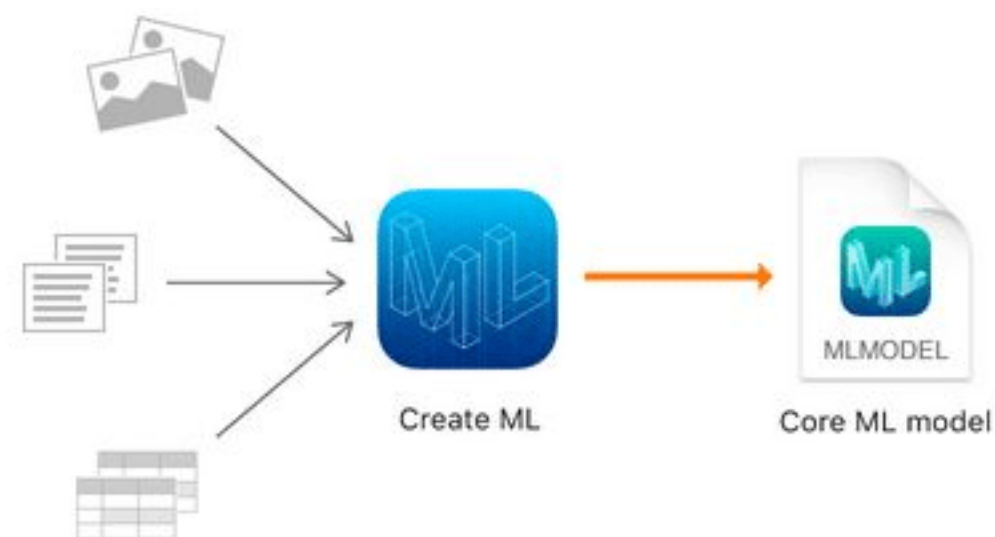
Model Generation

- CARTESIAN GRID SEARCH OR RANDOM GRID SEARCH
- BAYESIAN HYPERPARAMETER OPTIMIZATION
- INDIVIDUAL MODELS CAN BE TUNED USING A VALIDATION SET



Ensembles

- ENSEMBLES OFTEN OUT-PERFORM INDIVIDUAL MODELS
- STACKING/SUPER LEARNING (WOLPERT, BREIMAN)
- ENSEMBLE SELECTION (CARUANA)



Cloud AutoML Vision



SuperAnnotate

NO Code AUTO-ML Tools

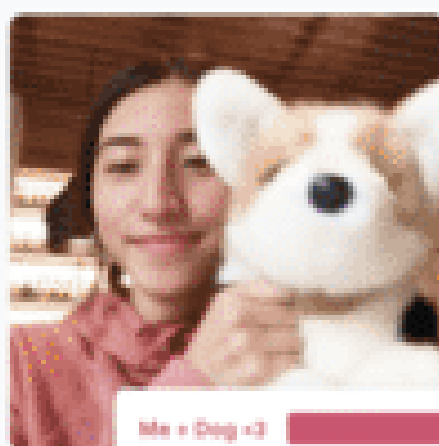
It's time to adopt drag and drop design tools to train models!!

The computer takes care of the iterative, repetitive, and dull tasks in your machine learning pipeline.

business users can leverage their domain-specific experience and quickly build AI solutions.

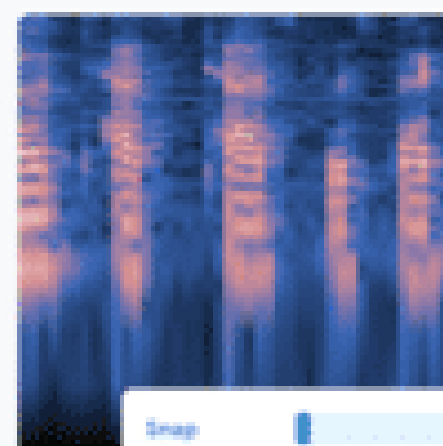
What can I use to teach it?

Teachable Machine is flexible – use files or capture examples live. It's respectful of the way you work. You can even choose to use it entirely on-device, without any webcam or microphone data leaving your computer.



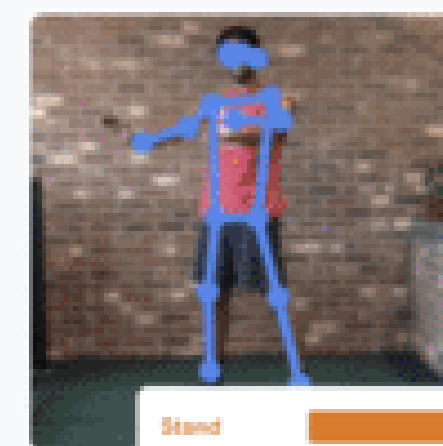
Images

Teach a model to classify images using files or your webcam.



Sounds

Teach a model to classify audio by recording short sound samples.
(WAV/MP3/etc file support coming soon.)



Poses

Teach a model to classify body positions using files or striking poses in your webcam.

AUTOVIML 0.1.681

H₂O.ai

PYCARET



AUTO KERAS

LOW Code AUTO-ML Tools

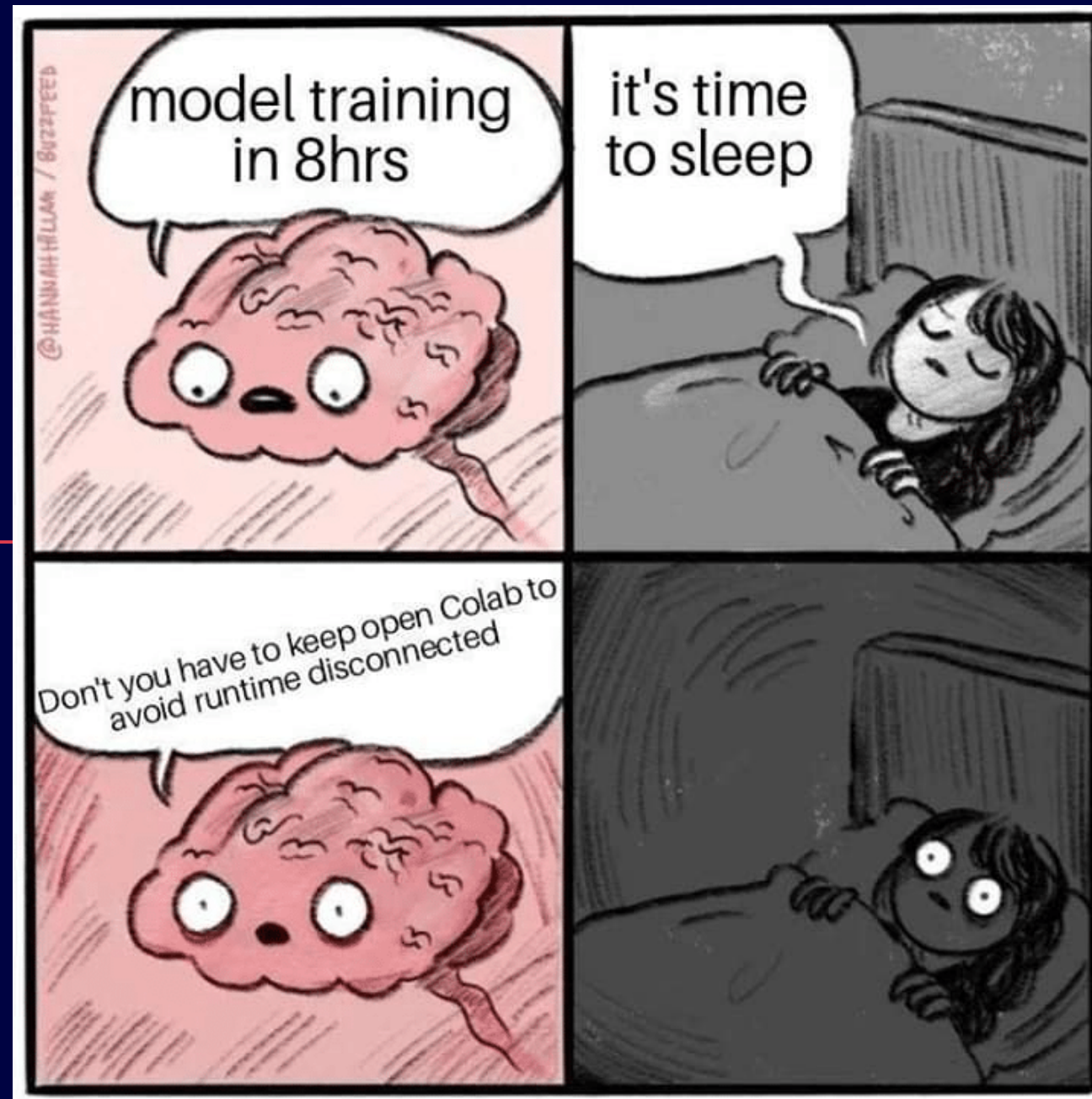
limited machine learning expertise to train high-quality models specific to their business needs.

The no-code platform offers drag and drop, which is an easy way to run the ML model **but lacks flexibility.**

Low-code ML is better, which offers **both flexibilities and ready-to-use code.**



- OPEN-SOURCE SOFTWARE LIBRARY FOR AUTOMATED MACHINE LEARNING
- BEING DEVELOPED BY DATA LAB AT TEXAS A&M UNIVERSITY AND COMMUNITY CONTRIBUTORS.
- PROVIDE EASILY ACCESSIBLE DEEP LEARNING TOOLS TO DOMAIN EXPERTS WITH LIMITED DATA SCIENCE OR MACHINE LEARNING BACKGROUND.
- PROVIDES FUNCTIONS TO AUTOMATICALLY SEARCH FOR ARCHITECTURE AND HYPERPARAMETERS OF DEEP LEARNING MODELS



Challenges -

AUTOML KERAS-

- RESOURCE HEAVY
- RIGHT HYPERPARAMETER SELECTION

GOOGLE COLAB

- GOOGLE COLAB NOTEBOOKS HAVE AN IDLE TIMEOUT OF 90 MINUTES AND ABSOLUTE TIMEOUT OF 12 HOURS.
- MAXIMUM LIFETIME OF A COLAB INSTANCE IS 12 HOURS.
- IN FACT AFTER ABOUT 2-3 HOURS OF SESSION OPENED A WINDOW WILL POP UP WITH A "NOT A ROBOT" BUTTON.

The background of the image consists of several sheets of architectural blueprints. The blueprints are detailed with various lines, including solid, dashed, and dotted lines, representing structural elements and dimensions. There are numerous small rectangular and circular shapes, likely representing rooms, windows, and doors. Some areas are labeled with numbers, such as '130', '127', '129', '137', '38', and '1000x600'. A large, curved structure, possibly a ramp or a large room, is visible on the right side. The blueprints are layered, with some sheets partially covering others, creating a sense of depth. The overall color scheme is monochromatic, with shades of gray and white.

Thank You