



Easy Doesn't Always Mean Safe 

Be Careful with AutoML



Sanjay N Kumar

Data scientist | AI ML Engineer | Statistician | Analytics Consultant

What is AutoML? 🔎



AutoML means Automatic Machine Learning



It helps people build ML models without coding!

🛠️ Drag, drop, click – and a model is ready!

👤 **Example:**

Just like using a microwave instead of cooking on gas – it's easy, but you don't learn real cooking!

No-Code Tools = Prepacked Magic



These tools work like a box of LEGO 

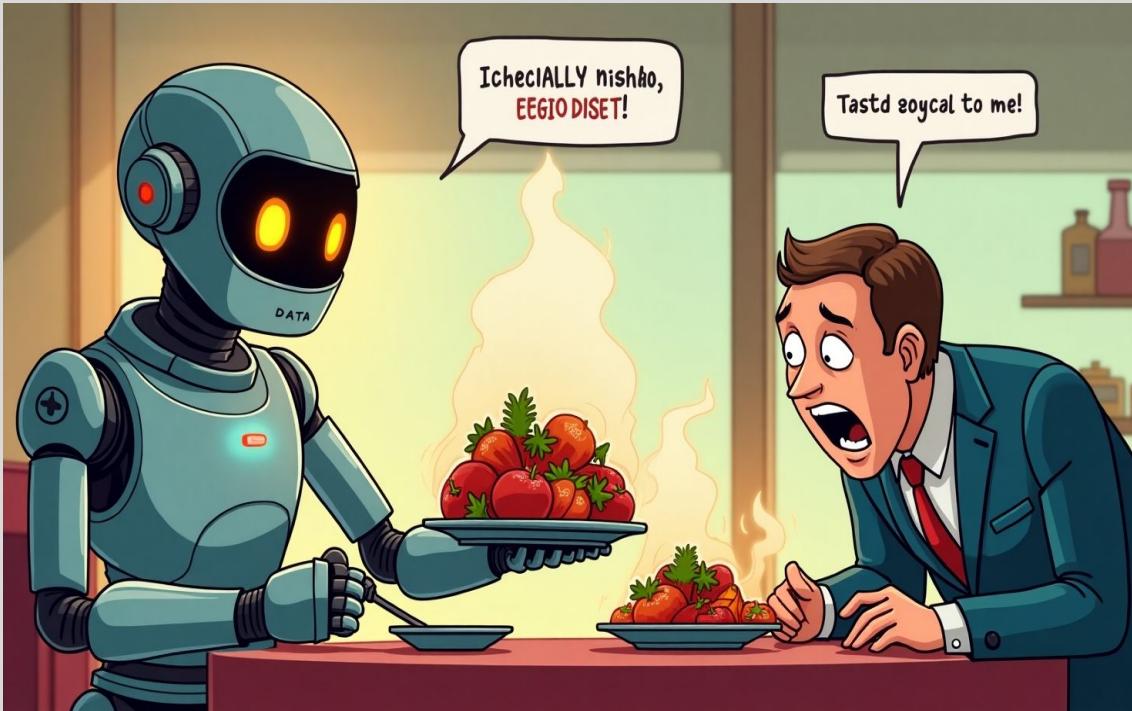
You just pick blocks and build models.

But...

Would you fly in a plane built by a 10-year-old using LEGO? 

That's the problem sometimes with AutoML.

What Can Go Wrong? !



1. ✗ Wrong data in → Wrong answers out!
2. 🤯 You don't know what's inside the model
3. 🔎 Hard to fix errors when you don't know the logic
4. 💊 Bad predictions can hurt real people
(like wrong disease detection)

Real-Life Example 1 –

Ice Cream & Drowning?



AutoML may say:



"Eating more ice cream causes more drowning"

Why?

Because both happen in summer. ☀️

👧 But a kid can say – "Wait! That doesn't mean ice cream is dangerous!"

AutoML missed the **real reason** (summer) ☀️

Real-Life Example 2 – Hiring Model



AutoML might build a model to hire people 🤖
But if past data had **bias against women**,
It may **continue rejecting women** ✗ 💁

No-code tools won't always catch this
unfairness.

A Math Peek –

Garbage In = Garbage Out



Formula:

$$\text{Prediction} = f(\text{Data, Model})$$

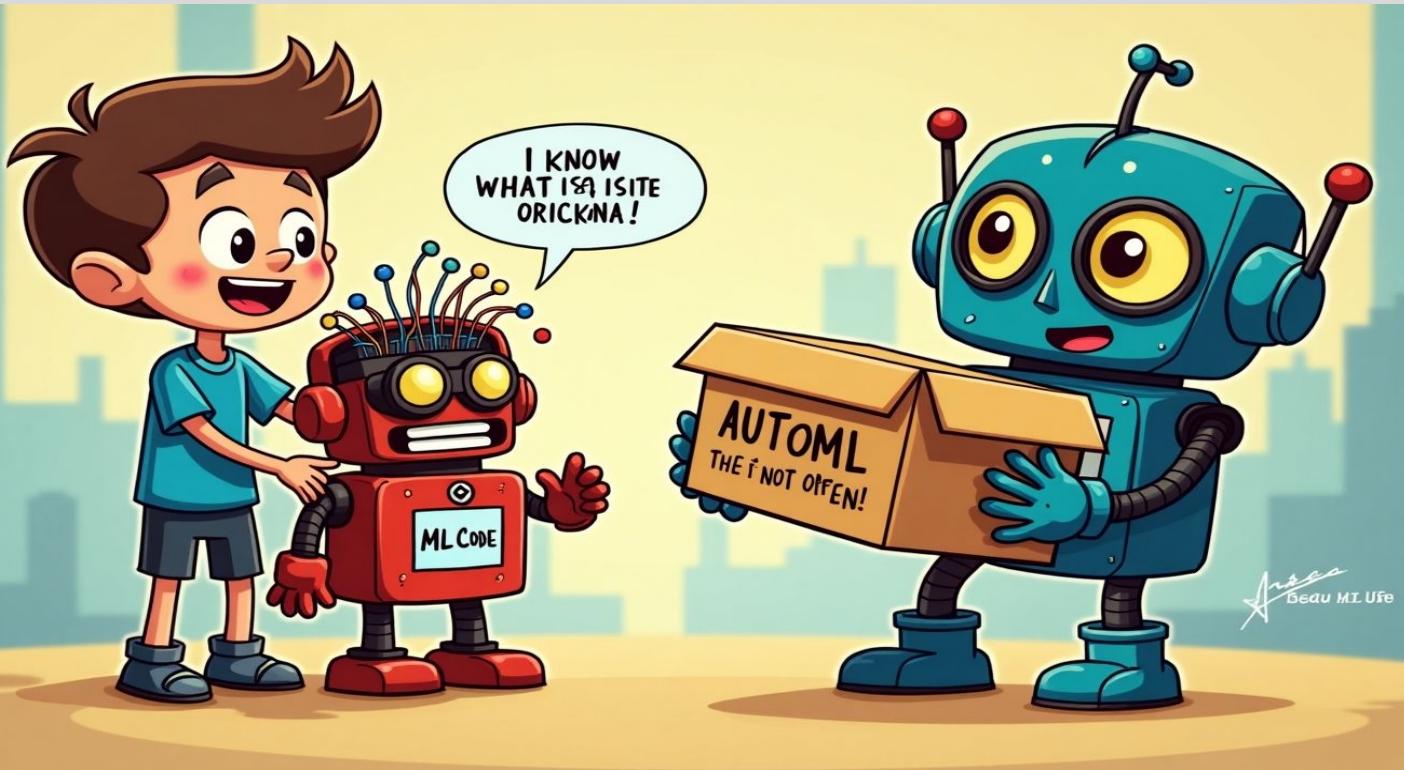
If data is **dirty** or has **bias** →

✗ Even the best AutoML = bad predictions

🏠 It's like: Building a house with broken bricks.

It looks fine but might fall!

Why Transparency Matters ?



- 🔍 When you write your own ML code:
- ✓ You understand what it's doing
- ✓ You can tweak & improve it
- ✓ You can explain it to others 

AutoML is a **black box** – it hides what's happening inside 

Real Example 3 –

School Grading



Imagine a no-code ML tool grading kids' exams



If it learned from past wrong grades,
It may keep giving bad grades to good kids! 😓

We must **check what the model learned**, not just the result.

Good Use vs Bad Use of AutoML



Good Use

Quick prototyping 🖌️

Business dashboards 📊

Learning ML basics 📚

School project demos 🏫

Fun experiments (e.g., predicting weather) 🌡️

Recommending movies or songs 🎬 🎵

Making colorful charts for presentations 🎨

Exploring ideas fast like a sketchpad 🖍️

Predicting toy sales 🎁

Comparing simple models for learning 🤖

Bad Use

Life-or-death decisions 🩺

Medical diagnosis without checks 🏥

Hiring or rejecting people 🧑‍🤝‍🧑 ✗

Predicting who might commit a crime 🚴

Deciding who gets a loan 💰 ✗

Approving or denying asylum 🛂

Judging students automatically 🎓 ✗

Deciding who should be arrested 🚓

Diagnosing rare diseases 🌟

Handling court evidence ⚖️

Final Thoughts



AutoML is like **training wheels on a bicycle** 
Great to start, but don't stop learning the real ride!

 Learn real ML concepts

 Always question what the model says

What You Can Do ?



🎯 Tips for beginners:

1. Ask: “Where did this data come from?”
2. Check if model makes sense logically
3. Try coding a small ML model yourself
4. Read basic ML books 📖 (for kids too!)

Questions to Ask AutoML



- Is my data clean?
- Did it learn something wrong?
- Can I explain this to a friend?
- What if this prediction goes wrong?
-  If a 10-year-old can't understand it, maybe it's too risky.



Don't Let the Tool Fool You!

AutoML is powerful — but only when **you're in control.**

**Understand the logic. Question the results.
Own the decisions.**

🔍 Let's move from *blind clicks* to *smart choices*.

Ready to explore the real brain behind the machine?

Reach out — and let's build intelligence with responsibility! 🤝



Sanjay N Kumar

Data scientist | AI ML Engineer | Statistician | Analytics Consultant



<https://www.linkedin.com/in/sanjaytheanalyst360/>



sanjaytheanalyst360@gmail.com