My own 3 laws of robotics

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The 3 laws of robotics written by Isaac Asimov in his books are very famous and are fundamental to his science fiction stories.

Asimov three laws

1) A robot may not injure a human being or, through inaction, allow a human being to come to harm.

2) A robot must obey orders given it by human beings except where such orders would conflict with the First Law.

3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

see https://xkcd.com/1613/

Are there any laws of robotics in the real world?

I'm talking about guidelines for us, the people who build robots, we all know that robots obey the laws of physics and will do whatever their software will say[1].

So here's my laws of robotics:

1. Demo setups always break

2. Videos don't tell the whole story

3. Robotics is expensive

1) Demo setups always break

This is the reality of setting up a robot demo to showcase your robotics results.

Make sure your demo is constantly in tip-top shape, there are plenty of things that go wrong from one day to the next: cables that snap, parts that break: unexpected obstacles, objects or containers in the wrong place, etc. etc.

Unless you're doing pure research, making sure your robot demo can run every day and does not break easily (and you don't actually leave it broken) is the one proof that your product will work tomorrow.

2) Videos don't tell the whole story

We all know robotics is hard. People see the one impressive robot demo video and the imagination wanders to other amazing things that this robot can do because now that it has performed that task this once in this video the robot has "mastered this task".

Nothing can be further from the truth. One impressive robot demo video does not mean the robot will work day-in-day-out, only actually working in production at the required reliability will demonstrate that.

We still need good demo videos but we should not hide the other videos showing all the failure cases.

3) Robotics is expensive

We often compare the unbelievable, exponential increase in computer speed and capacity and the unbelievable, exponential decrease in price of computing power to what will our robots be able to do once that exponential growth kicks in.

Robots are not cheap and fast like computers, they are expensive and fast or cheaper and slow or expensive and bulky, or cheap and cute... robots are physical machines and it is impressive how we, humans, quickly compare CPU power to electric motor power. Yes, large CPU power has benefited robots massively and yes, both *cost and quality of robot parts are moving in the right direction*, but nobody expects any other machine to improve exponentially. Why there is no talk of a Moore's law for coffee machines? Or dishwashers? Or washing machines? Or cars? Today's washing machines are extremely high quality and extremely cheap, yet *there is a limit to how cheap or how powerful robots can get.*

Keep it real and never compare a robot to a phone or a laptop in terms of price/performance, rather compare it to similar technologies such as electric motors, air compressors, sensors, gearboxes, and transformers (the alternate current ones, not the movie 'transfrormers', that is science fiction)

Finally, The Isaac Asimov fans will be well aware that there are really 4 laws of robotics.

In the last of the "Foundation series" books [https://en.wikipedia.org/wiki/Foundation_and_Earth] Asimov introduces another law of robotics, called the zeroth law.

0) A robot may not harm humanity, or, by inaction, allow humanity to come to harm.

This one is good, *this one is also for us to follow*, us the people who build robots, so you can make sure your robot works in a way that benefits all of humanity, you should give it a peaceful and meaningful purpose to make this world a better place for us all.

[1] Robots will not do whatever we want them to do, because that's not how software works. *Your software will hardly ever do what you want, but will faithfully do what you say.*