

Who am I?

- Jacob Christ
- <https://hackaday.io/JacobChrist>
- pontech.com (and others)



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PROJECTS (4) CONTRIBUTIONS (4) FOLLOWING (19) BITS (2)

MY PROJECTS

- chipKIT Oscilloscope Plotter (2.5k views, 39 followers, 10 comments, 13 likes)
- Hackaday 10th Birthday Party a... (123 views, 22 followers, 2 comments, 5 likes)
- Ping Pong Ball Audio Spectrum... (668 views, 484 followers, 0 comments, 4 likes)
- PineapplePNP.com (287 views, 4 followers, 0 comments, 3 likes)

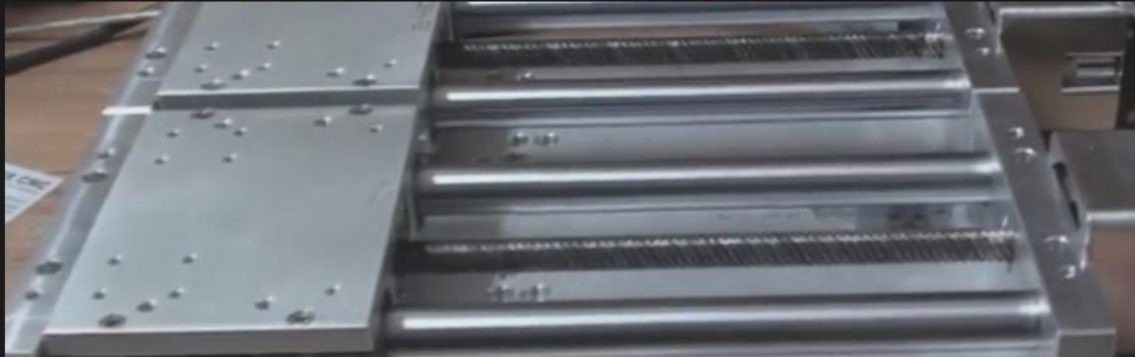
WHO I AM
Proprietor of Quick240.com and pontech.com

WHY I'M ON HACKADAY.IO
So that I don't get the evil eye from Jasmine (<http://hackaday.io/hacker/349-jasmine>) at Hackaday meetups.

#QUICK240

Some things my friends and I have built...

SEARCH RESULTS FOR: 800 INCHES



800 INCHES PER MINUTE AT 0.00025" RESOLUTION

August 28, 2014 by James Hobson

140 Comments

The folks over at PONTECH have just released a pretty impressive opensource PIC32 library for controlling a linear slide at speeds of **800 inches per minute!**

SEARCH RESULTS FOR: THE OLD PING-PONG BALL LEVITATION TRICK

THE OLD PING-PONG BALL LEVITATION TRICK

July 2, 2014 by Adam Fabio

15 Comments



[Jacob] has put a slightly new twist on the levitating ball trick with his **ping-pong ball levitation**

Now its time to Musk it up...

Affordable World Healthcare

Jacob Christ

Hack-a-day Unconference, Pasadena, CA 2017

Build Something That Matters

Our Robot overlords Want Us to be Healthy

Jacob Christ

Hack-a-day Unconference, Pasadena, CA 2017

Build Something That Matters

Why this matters (to me)

- I was raised by a single mother with not a lot of money.
- In my mid twenties I began suffering from an affliction.
- I had no medical insurance.
- I knew (a little bit) about pre-existing condition clauses.
 - I thought I had no options.
- I was scared and I didn't know what to do.

Why this matters

- Its unpleasant to suffer.
- Its unpleasant for empathetic humans when other people suffer.

Disdain and Reverence for the Medical Profession

- Extensive testing done over weeks with several doctors
 - Diagnosis: Stress
 - Suffered from conformation bias
 - Additional doctors not knowing what was wrong gave same diagnosis
 - 10 Years later found out I had sleep apnea
 - I got a CPAP and felt better practically over night
- Within minutes without examination a doctor had diagnosed me
 - And they seem to be right

Disdain and Reverence for the Medical Profession

- Having dabbled in engineering and having spent multiple days trying to diagnose a problem in a simple system I designed from scratch and knew everything about it.
- When I go to the doctors today it drives me nuts when I'm diagnosed based on symptoms alone without even an examination.

Why I think doctors are successful

- They treat the highest probable disease based on the symptoms seen

Why I think doctors are fail

- They treat the highest probable disease based on the symptoms seen

Why I think doctors are fail

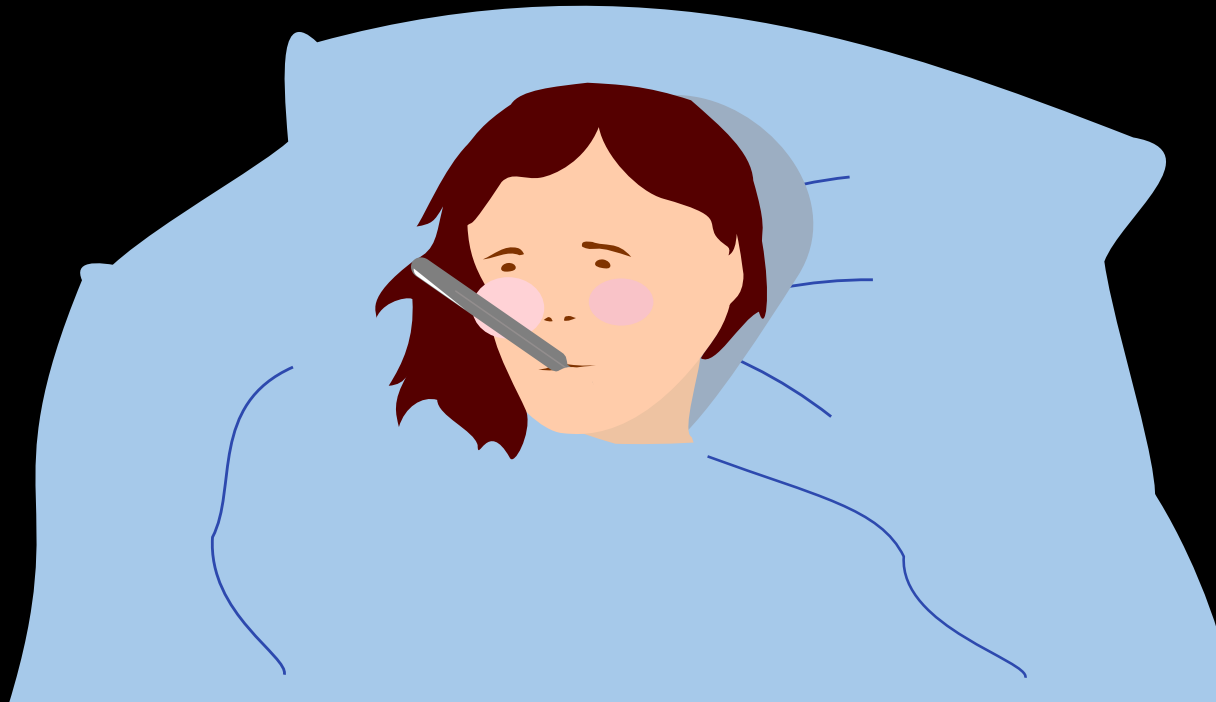
- They treat the highest probable disease based on the symptoms seen
 - If your disease is not the highest probable then you may get diagnosed incorrectly.

How do we fix why doctors fail?

- This is not the only way to solve this problem.
 - Google's Open Source Tensor Flow Machine Learning cloud platform.
 - It may not be ready today, but let's start working so that we are ready with Google is.
 - Larger Database (human brain is pretty sucky at recall).

Here is how this might work..

Sick Person



Sick Person



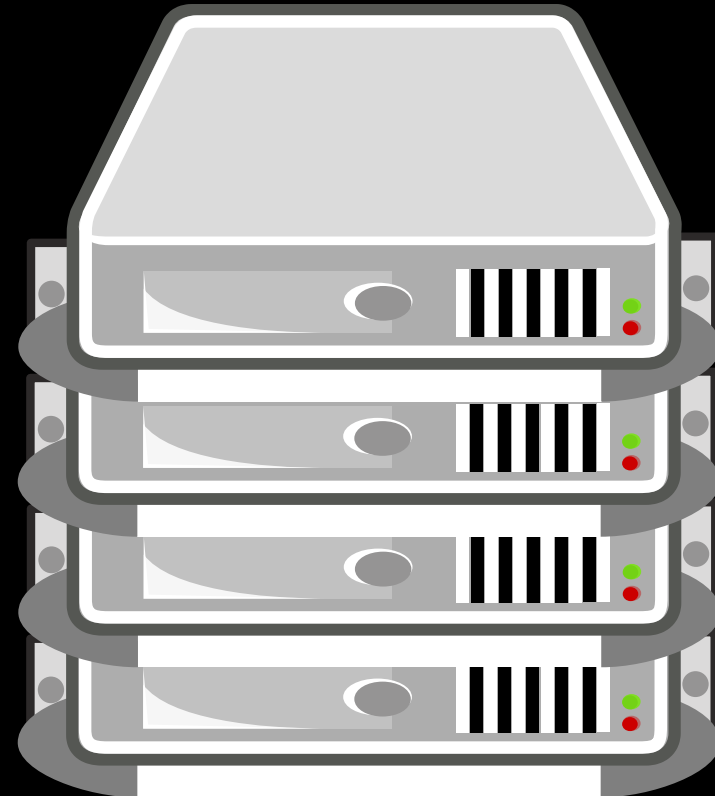
Tell your phone your what you can

- Name
- Age
- Weight (don't lie now, Android's don't judge)
- Diet
 - What have you eaten recently?
- Symptoms
 - How are you feeling today?
 - Did you brush your teeth today?
- Environment
 - Are others around you experiencing similar symptoms?



Sick Person

AWH
Statistical
Lookup



Results returned

- Possible remedies that do not require consultation of physician.
- Remedies that require further consultation.



Sick Person

Doctor



Prescriptions delivered through phone

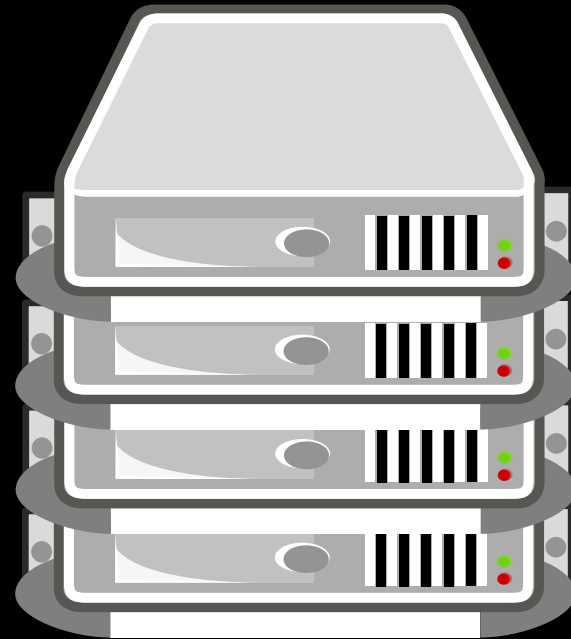
- Order automatically place
 - Amazon Pharmacy Prime
 - Can we get a cut from this recommendation?



What if there is not enough data?

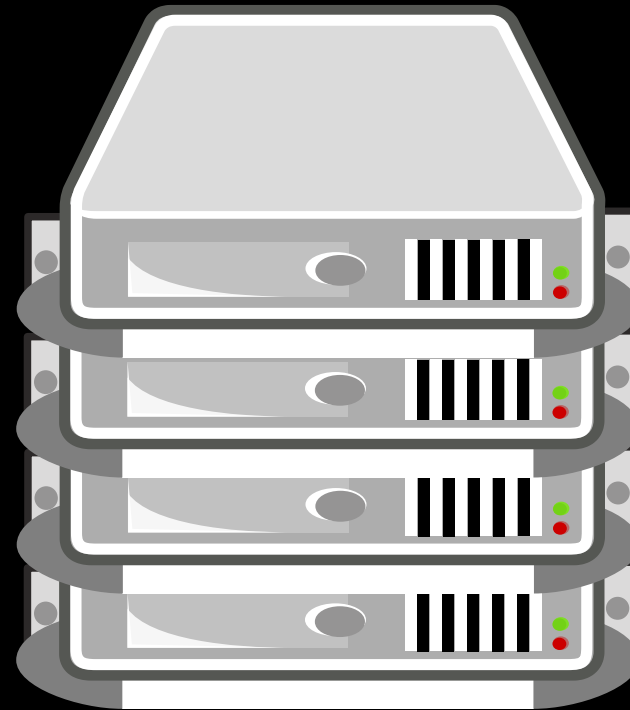
Machine
Learning
Algorithm

Team of
Specialized
Doctors



Sick Person

Machine Learning Algorithm



Results returned

- Back to where we were before but with a smarter overlord
- Possible remedies that do not require consultation of physician.
- Remedies that require further consultation.



Health Education

- This system could also be used to deliver preventative health education on an as needed basis.
- Recommend good potential partners for safe sexual activity by using probability.



How do we start



- Super Small Team
 - App programmer (1)
 - ML Programmer (1)
 - Doctors (1)
 - Fund Raiser / Advocate (1)
- Target highly probably easily treatable issues
- Target Machine Learning From The Start

What's out there already

- Pocket Doctor (and others like this)
 - Yahoo search approach: Hire people to categorize the web.
- Our Idea
 - More googly: Let the machines do the work.

Who could benefit from this

- WHO and World Bank Group report shows that 400 million people do not have access to essential health services
 - <http://www.who.int/mediacentre/news/releases/2015/uhc-report/en/>
 - Other have suggested that this number is very low, I agree.
- System could be adopted by current providers to lower costs or allow for more in-depth treatment for the same costs.

This is just a start of an idea...

Other ideas

- There is lots can be done that is low hanging fruit
 - Kalman Filters
 - Gamification
 - I just want to make games.
 - Jump in, add your two cents.

A call to action

- TBD