*Social*Networks*
QUIZ #1
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Q1. [+10] You just received following email from *Nuisance Finance*:

> *"We have developed a new Ultra-Deep-Machine-Learning algorithm to predict stock market behavior:* **BULLish** *or* **BEARish**. *The predictions will be provided to you once a day every day before the market opens. During a trial period of one week (5 days), you will be provided our predictions at no cost to you! You may use our predictions, as you wish, during the trial period. However, if we predict the market without a single prediction error, you are legally bound to invest a sum of no less than $1M in our fund for a management fee of 5% and performance fee of 50%."*

Should you agree to invest? (Assume that you have the money!)

SOLN.1 *No, NO, NO!!! Absolutely not!! Imagine the following algorithm that Nuisance Finance (NF) might be using. They have sent 32 such emails to 32 people like you. Assume that they (being rational) all agree to this scheme. NF proceeds as follows: on first day, they send Bullish-message to one half of the people (16 people) and Bearish message to the other half (16 people). They will be wrong for one of these two groups, and that group need not be contacted any further. They now proceed to predict (recursively) for the next 4 days with emails going to 16 people. They send Bullish-message to one half of the people (8 people) and Bearish message to the other half (8 people). They will be wrong for one of these two groups, and that group need not be contacted any further. Etc. At the end of the five days, there must be one person left, who has received ALL correct predictions. The probability that that last person is you is $1/32$ and your expected loss is at least $\$1,562.50$!*

Q2. [+15] Some questions about the internet...

- How can one steal bitcoins?
- How soon will the Moore's law fail?
- How much will it cost to read a human genome correctly?
- Why wasn't there a Netflix II competition?
- What is a "lunchtime attack?"
- Why was Silkroad shut down?
- Why isn't 23&me providing health-related genetic tests?
- What does a geofence protect?

- Can you print a gun with a 3D printer? Does it also print bullets?

- Can a machine learning algorithm read human hand-writing to defeat Captcha?

- What is the upper-limit on the number of friends you can have on Facebook?

- How high was Angelina Jolie's risk of getting breast cancer?

- How did NSA break RSA cryptographic scheme?

- What must you invest in to be able to say "OK. Glass?"

- Who owns Big Dog?

SOLN.2 *Does it really matter?*