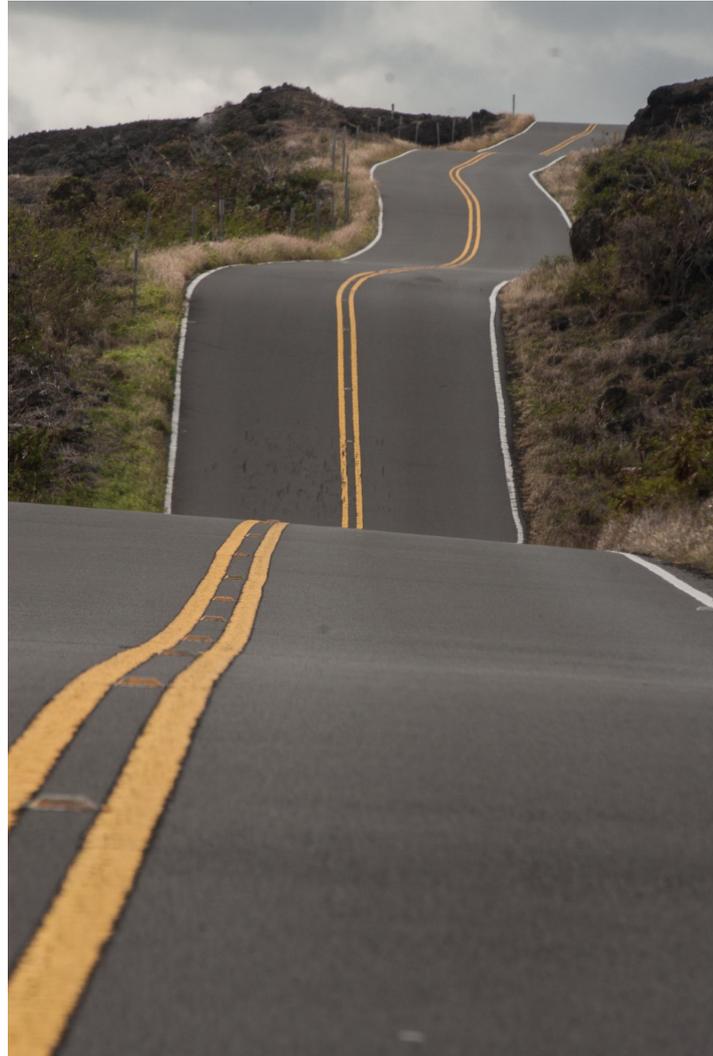


# Surviving PhD



Denis Savenkov, 6th year PhD student

**There are a lot of ups and downs**



**PhD ≠ Life, PhD □ Life**



**KEEP  
CALM  
AND  
IMPROVE  
YOURSELF**

# Develop good habits



# Daily Routines Save Energy

- PhD isn't a sprint
- more work  $\neq$  better work
- sleep well, exercise, eat healthy



# Time Management

- Before you try to improve something, measure it
- Track your time: Toggl, etc.
- Will power:
  - Pomodoro Technique
  - Lots of apps, browser plugins, etc.



# Most of the work we do are of low value

- It's so easy to get yourself busy in the inner loop = making small improvements, incremental progress
- you can spend hours, days, weeks, month, years doing the work that nobody cares about
- Make sure you spend some time in the outer circle, thinking about the big picture
  - Ask yourself: “Is what I’m doing important?”



**“If you want to do great work, you clearly must work on important problems, and you should have an idea.”**

**R. Hamming (You and Your Research)**

**Your Goal is to be**  
**“a person who did X”**

\* from A. Karpathy blog post “A Survival Guide to a PhD”

# Read Papers!

- Make a habit to read, choose days/times and read
  - e.g. when you commute
  - I read while I walk home to work
  - iPad was one of the key game changers in my paper reading
- Subscribe to author updates on Google Scholar
- Take notes and summaries
  - Make sure there is an easy way to remind yourself what the paper was about
  - Use Mendeley or similar
- Analyze the results and implications
- What you can use in your work?
- One paper / week[month] to get into more details
- Organize/participate in reading groups with your fellow students

# Mendeley

**Generative Adversarial Nets**

Ian J. Goodfellow, Jean Pouget-Abadie\*, Mehdi Mirza, Bing Xu, David Warde-Farley, Sherjil Ozair<sup>†</sup>, Aaron Courville, Yoshua Bengio<sup>‡</sup>  
Département d'informatique et de recherche opérationnelle  
Université de Montréal  
Montréal, QC H3C 3J7

**Abstract**

We propose a new framework for estimating generative models via an adversarial process, in which we simultaneously train two models: a generative model  $G$  that captures the data distribution, and a discriminative model  $D$  that estimates the probability that a sample came from the training data rather than  $G$ . The training procedure for  $G$  is to maximize the probability of  $D$  making a mistake. This framework corresponds to a minimax two-player game. In the space of arbitrary functions  $G$  and  $D$ , a unique solution exists, with  $G$  recovering the training data distribution and  $D$  equal to  $\frac{1}{2}$  everywhere. In the case where  $G$  and  $D$  are defined by multilayer perceptrons, the entire system can be trained with backpropagation. There is no need for any Markov chains or unrolled approximate inference networks during either training or generation of samples. Experiments demonstrate the potential of the framework through qualitative and quantitative evaluation of the generated samples.

**1 Introduction**

The promise of deep learning is to discover rich, hierarchical models [2] that represent probability distributions over the kinds of data encountered in artificial intelligence applications, such as natural images, audio waveforms containing speech, and symbols in natural language corpora. So far, the

1406.2661v1 [stat.ML] 10 Jun 2014

**Details** | Notes | Contents

Type: Journal Article

**Generative Adversarial Networks**

Authors: I. Goodfellow, J. Pouget-Abadie, M. Mirza

[View research catalog entry for this paper](#)

Journal: *arXiv preprint arXiv: ...*

Year: 2014

Volume:

Issue:

Pages: 1-9

**Abstract:**

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## Denis Savenkov

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Interests: machine reading, knowledge extraction, information retrieval, machine learning  
[My CV](#)

I am a Ph.D. student in the Intelligent Information Access Lab of Emory University, working with [Prof. Eugene Agichtein](#). I got my bachelor and masters degree from Tula state university, Russia. After graduation I moved to Moscow and finished [Yandex school of Data analysis](#). I worked in Yandex for three years focusing on the query-biased document summarization problem (machine learning, quality measures). Currently my research interests lie in the field of machine reading, knowledge extraction and representation.

### News

- [Slides](#) from my presentation on Web Search and Data Mining (WSDM) 2016 conference doctoral consortium.
- Here are some slides on "Relation extraction" for Emory NLP research group seminar: [relation extraction overview slides](#)
- I spent a wonderful summer 2014 at Google's knowledge vault team, thanks everybody!
- Our team [won the Yandex Switch Detection Challenge 2012](#) (report is available [here](#), feature generation code is [here](#))

### Publications

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2016

[CRQA: Crowd-powered Real-time Automated Question Answering System](#), Denis Savenkov and Eugene Agichtein  
HCOMP 2016 [pdf](#)

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[When a Knowledge Base is not Enough: Question Answering over Knowledge Bases with External Text Data](#), Denis Savenkov and Eugene Agichtein  
SIGIR 2016 [pdf](#)

# Classes and Learning

- Make sure what you learn stays with you
  - Take notes
  - Review and write summaries
    - Evernote, Github, classeur.io, ...
- “Learning How to Learn”
  - <https://www.coursera.org/learn/learning-how-to-learn>
- Make sure you develop some skills beyond your research area
  - Improve your coding: Programming competitions
  - Learn new platforms, languages, frameworks
  - Follow technological blogs
  - Attend local Meetups

# Switch Contexts, get a Hobby



# For me it is Sports



2010



-70 lbs.

2016



# The Internship

- Industry experience related to your field
- Ideally:
  - Spend summer working on a topic related to your thesis
  - Write a paper
- Building network
- When?
  - Early Fall
  - Deadlines in October/November/December

# Personal Life

- Family (spouse, children)
  - Make sure you include family time in your routines
  - Your family usually sacrifice more
- Finances
  - Track your money and Budget
    - ✓ e.g. Mint or other tracking software
  - Things we spend money on doesn't make a difference in the long term
    - ✓ best investments for me: iPad, road bike
  - Internships pay well and can help replenish your budget

# Links

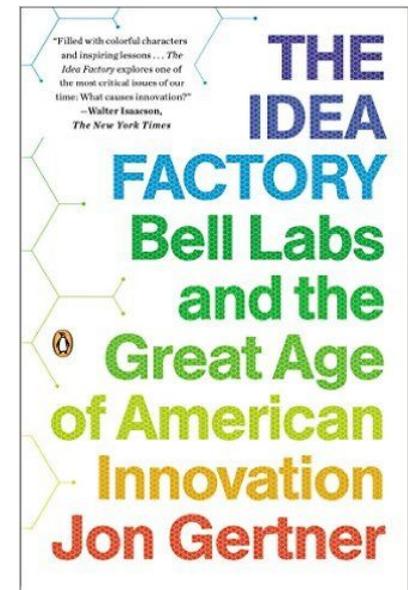
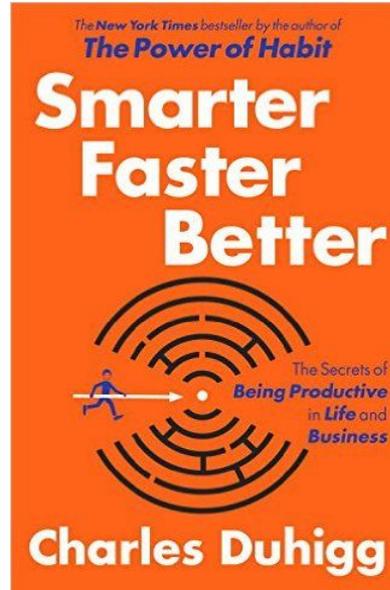
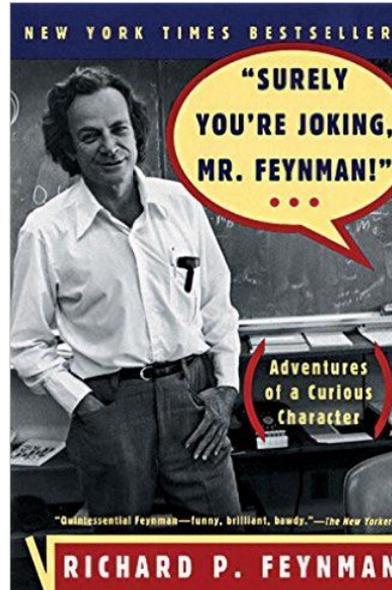
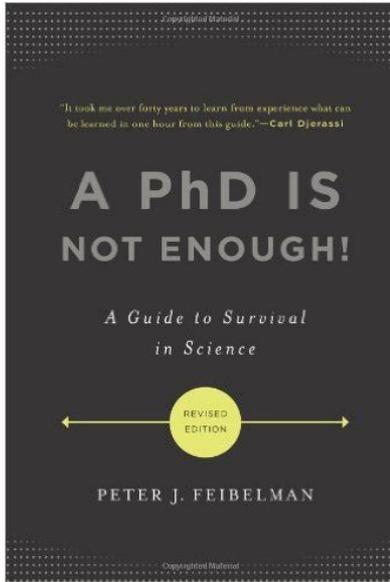
- “How to survive your PhD” course:  
<https://courses.edx.org/courses/course-v1:ANUx+RSIT-01x+3T2015/info>
- Andrej Karpathy “Survival Guide to PhD”:  
<http://karpathy.github.io/2016/09/07/phd/>
- Research Skills notes by Simon Peyton Jones:  
<https://www.microsoft.com/en-us/research/people/simonpj/>
- Some other links:  
[http://www.cs.virginia.edu/~robins/CS\\_readings.html](http://www.cs.virginia.edu/~robins/CS_readings.html)

# PhD Comics and PhD Movie



<http://phdcomics.com/movie/>

# Some books



**GLHF**

\* Good luck and have fun