Outline

Outline

Maarten

IR

Keep asking how NNs help us get closer to "getting the right information to the right people in the right way"

Away from supervision

Train deep models based naturally occurring "pseudo labels" or interactions

Autonomy

Focus on solutions that are increasingly autonomous—with that comes the need for transparency: models that are able to offer explanations of their decisions

Outline

Alexey

Supervised text matching with neural network

Companies use neural networks for matching (short) texts, because the gains in performance are easily converted into revenue and/or user happiness.

Neural network based user behavior models

User interests and behavior pattern can be learned directly from the data. In the next few years a lot of ideas developed for PGM-based click models will be tested in the neural framework.

Outline

Bhaskar's notes

Library or Librarian?

When you learn representations of text - you are encoding real-world knowledge into your model (e.g., "us president" is related to "obama"). How much knowledge should your model encode? Is your model a *library* of knowledge, or a good *librarian* capable of working with incomplete information? What's the best trade-off?

Hammer or Lens?

Neural IR research shouldn't be all about trying shiniest new neural models for IR. If you use DNNs as a *hammer*, every problem will look like a nail. These new models should also be a *lens* through which we grow our understanding of IR fundamentals.

Neu-IR'17 workshop

For more discussions, please come to the workshop on Friday.

Outline

Christophe's thoughts

Unsupervised learning as a first-class citizen
Learning complicated models from query/relevance pairs is great, but let's try to figure out how well we can do without them.

Occam's razor
Do we really need those 10,000 extra parameters or 10 hidden layers?

Is the hype real? — or will the bubble burst?
We've been doing fine without deep learning for a long time. Skepticism is healthy, but only as long as it doesn't kill innovation.

Outline

Mostafa

- We have a really nice set of matured solutions and deep understanding of problems for many IR tasks. Ignoring everything we have is probably not a good idea. Let's keep in touch with what we achieved so far while developing new models.
- IR community is always proud of being concerned about reproducibility. It is actually getting more important with DNNs to keep the position of this concern in our mind.
- Getting good results would be awesome if your model is also theoretically justified. Do the math!

Outline

Tom

What have the new methods brought us

- human-computer natural language communication

Biggest current challenges

- training material
- consistency
- long-term dependencies
- evaluation
  - naturalness?
  - tone of voice?
  - on-topic-ness?

New directions

- deep reinforcement learning
- new twists
  - Attention is all you need [Vaswani et al., 2017]?
- GANs
- Your next idea...?!?