Worksheet #4
May 7th, 2020

Paper: Relational Neural Networks

- General questions

  1. What is this paper about? Could you summarise its contribution in a paragraph?

  2. How does this work differ from others mentioned in the paper?

  3. Do the authors present experiments? What is the methodology used? Does it sound correct? Why?

  4. What are the main results/findings/conclusions? Are the results useful/relevant? Why?

- Technical questions

  1. Regarding the sentence: "While expressive, these models (note: structured) do not incorporate or discover latent relationships between features as effectively as deep networks.", and having played with the Aleph system, do you think that there is any limitation in learning latent relationships (for example, in order to learn the relation `grandparent` the system may need to learn the relation `parent`) in systems such as Aleph?

  2. How does *Relational Random Walks* (RRW) work and how does it compare with Inductive Logic Programming (ILP)? Does RRW actually learn latent relationships?

  3. How does the proposed method allow for a reduction in the number of network weight parameters? And why is this reduction important?

  4. What are Tensor Based Models?

  5. The examples reported in this paper are all about binary relations. Could you think of a way of extending this to handle n-ary relations?

6. In the evaluation, the authors use AUC-ROC and AUC-PR to evaluate the models. Why are they using these evaluation metrics? (you may need to complement your reading with this).