

IRT

Natural Language Processing

University of Maryland

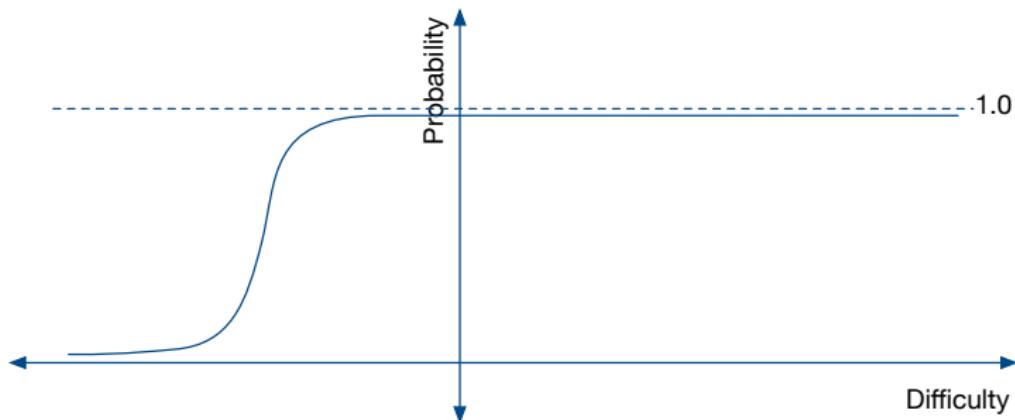
Exercises

Drawing IRT Curves

- Low difficulty
- High difficulty
- High discrimination
- Low discrimination
- Low feasibility

Drawing IRT Curves

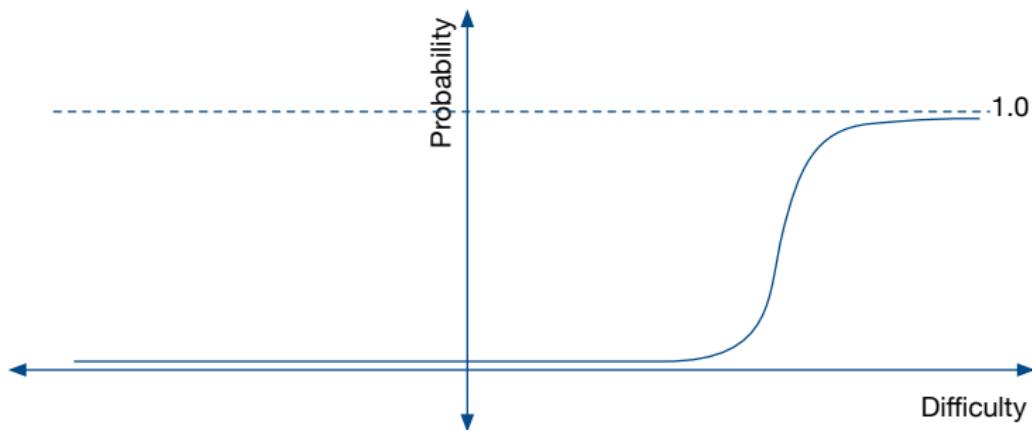
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Drawing IRT Curves

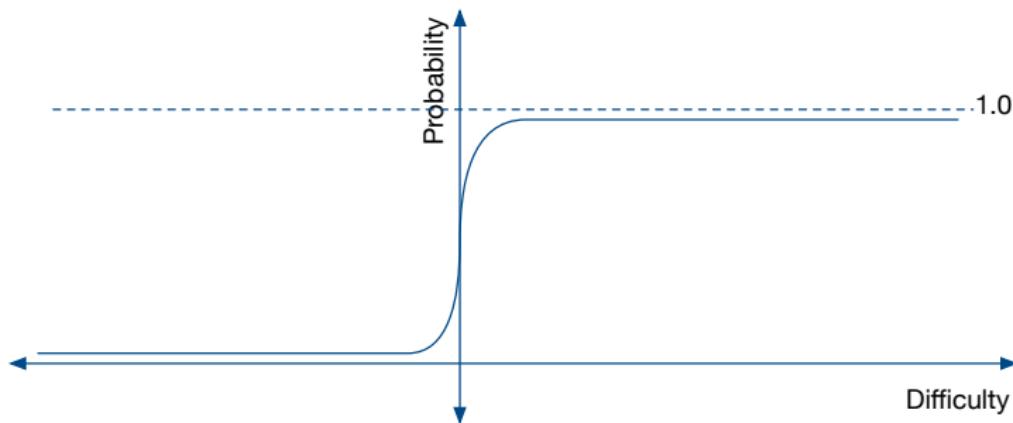
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Drawing IRT Curves

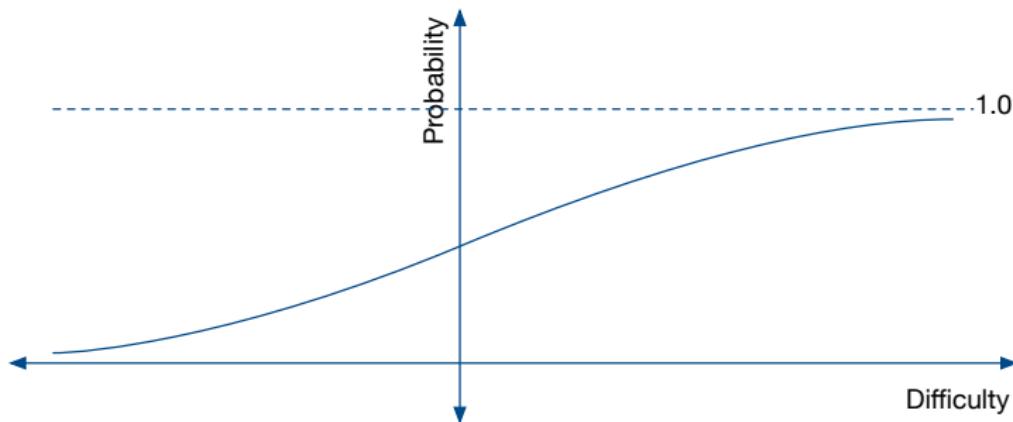
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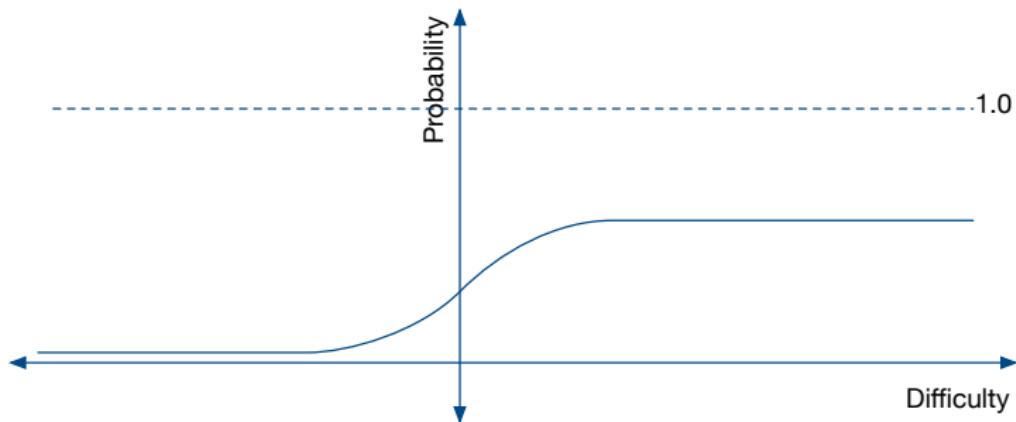
- Low difficulty
- High difficulty
- High discrimination
- Low discrimination



- Low feasibility

Drawing IRT Curves

- Low difficulty
- High difficulty
- High discrimination
- Low discrimination
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Examples of Questions

What's an example of:

- A low difficulty question
- A high difficulty question
- An infeasible question
- A high discrimination question
- A negative discrimination question

Bradley Terry vs. IRT

- What is the analog to difficulty, skill, and correctness in the Bradley Terry model?

Bradley Terry vs. IRT

- What is the analog to difficulty, skill, and correctness in the Bradley Terry model?
 - ▶ Difficulty = Rating / value of response 1
 - ▶ Skill = Rating / value of response 2
 - ▶ Corectness = Preference

Bradley Terry vs. IRT

- What is the analog to difficulty, skill, and correctness in the Bradley Terry model?
- A Bradley Terry model doesn't have something like feasibility. What would that mean? Why does it not make sense.

Bradley Terry vs. IRT

- **What is the analog to difficulty, skill, and correctness in the Bradley Terry model?**
- **A Bradley Terry model doesn't have something like feasibility. What would that mean? Why does it not make sense.**
In original BT models, this is called "home field advantage". A cap on probability of one of the responses being preferred. It doesn't make sense because Bradley Terry is symmetric.

Bradley Terry vs. IRT

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Bradley Terry vs. IRT

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- **A Bradley Terry model doesn't have something like feasibility.**
What would that mean? Why does it not make sense.
- **A Bradley Terry model doesn't have something like discrimination. What would that mean?**
That for some prompts, there is a clear unambiguous answer.

Bradley Terry vs. IRT

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- A Bradley Terry model doesn't have something like discrimination. What would that mean?
- This isn't so crazy... what's a circumstance where that might apply?

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Factoid QA without explanation, quotes.