Skill Prediction

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* **Problem:** Many unlabeled problems in the tutoring system

* **Motivation:** By recommending skills associated to math problems in a tutor we could help content creators

* **Goal:** Predict the skills associated to math problems based on the similarity of their text to that of labeled problems

* **Datasets:** 2005-2006 Assistments Tutor math problems with 5, 39 and 106 skill KC models

* **Approaches:**
  (1) Text mining using TextGarden and SVM classification,
  (2) Search engine relevancy using the Lemur Toolkit and KNN classification

* **Results:**
  - Recommending skills based on text can be highly effective.
  - SVM classification outperforms search engine/KNN approach.
  - When predicting the skill of the 106 KC model the correct skill was in the top 5 suggested skills 81% of the time, and 90% with the 39 KC model.