A Proposed Modification to Required Classes

Educational Review Committee

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This document is about a proposal to alter the set of compulsory courses for MLD PhD students. In summary, we propose that every student must take Intermediate Statistics, Machine Learning and Statistical Machine Learning, but they will be allowed to choose two out of the four courses of Databases, Algorithms, Optimization, and Graphical Models.

1 Proposal

The compulsory courses for Machine Learning Department PhD students are

1. Machine Learning (10-701)
2. Intermediate Statistics (10-705)
3. Statistical Machine Learning (10-702)
4. Multimedia Databases and Datamining (15-826)
5. Graduate Algorithms (15-750) or Algorithms in the Real World (15-853)

We would like to propose the following change: instead of requiring options 4 and 5 (Databases and Algorithms), we let students choose two out of the following four classes

- Multimedia Databases and Datamining (15-826)
- Graduate Algorithms (15-750) or Algorithms in the Real World (15-853)
- Convex Optimization (10-725)
- Probabilistic Graphical Models (10-708)

Other elective requirements would remain the same. Since Optimization and Graphical Models are currently offered as electives, in the new system, we’d propose that the two courses not chosen by a student would still be allowed to be taken as electives.
2 Analysis

Pros

1. Optimization and Graphical Models are both very relevant to modern machine learning research, and it is presently possible to graduate without much knowledge of these fields.

2. Students will still have the option to take Databases or Algorithms if it is more relevant to their research area or they wish to strengthen their knowledge in these topics.

3. Students would have more flexibility when scheduling courses, which would result in less scheduling conflicts.

4. Students and their advisors will have more freedom to plan an educational course based around the students’ previous knowledge and interests.

Cons

1. We might need to have guarantees about how regularly the department will offer the Optimization and Graphical Models courses.

2. Some students might not receive as thorough a grounding on some topics in the Algorithms and Databases courses.