'396' Undergraduate Research Project Application Form

Office for Undergraduate Research in Science
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Form version 200603

Instructions for students

- *All fields are required, unless indicated otherwise.*
- Download and print this form. Complete Section 3 and sign.
- See "How students can apply" instructions in Section 2.10.
- Your supervisor or department will tell you if you are selected for this project. If so, you will receive a code to register for a '396' course on MINERVA.

1 Supervisor Information

Name:	Dr. Christophe Weibel
Email:	christophe.weibel@mail.mcgill.ca
Phone:	514-398-3853
Website:	http://math.mcgill.ca/∼weibel
Department or Unit:	Department of Mathematics and Statistics
Course number:	MATH 396

2 Project Information

2.1 Term:

Summer 2008

2.2 Project start & end dates:

May 1 - June 30, 2008

2.3 Project title:

Optimization approach on the Netflix prize problem

2.4 Project description:

The student will get acquainted with theory of discrete and continuous optimization, as well as learn some notions of probability, statistics and machine learning, in order to tackle a problem inspired by the Netflix prize competition. The Netflix Prize is an ongoing open competition for the best collaborative filtering algorithm that predicts user ratings for films, based on previous ratings. Using the data provided by Netflix, the student will be able to test his algorithms and improve them as the project progresses. The project will be divided into 3 main parts. First, the student will choose a mathematical model suited for this task. He will then choose tools in order to optimize the accuracy of the predictions according to the model. Finally, he will implement the algorithm, and test it. He will also provide a report, and do a final presentation.

2.5 Prerequisites:

1 term completed at McGill + CGPA $\geq$ 3.0; or permission of instructor.

2.6 Grading scheme:

30% quality of the algorithm presented, 60% quality of the final report and 10% quality of the final presentation.

2.7 Other:

2.8 Status:

This project is:
( ) Open to applicants
(X) Already taken; no more positions available this term
( ) Taken, but contact me for other possible projects this term

2.9 Ethics, safety, & training:

Which of the following, if any, is involved?
( ) Animal subjects
( ) Human subjects
( ) Biohazardous substances
( ) Radioactive materials
( ) Handling chemicals
( ) Using lasers
For undergraduate students, ethics and safety compliance is the supervisor's responsibility.

2.10 How students can apply:

This project is already taken; no more positions available this term.

3 Student Information. (1) Print legibly and sign. (2) See 'How students can apply' in Section 2.10.

Name:	
McGill ID:	
Email (first.last@mail.mcgill.ca):	
Phone:	
Program (e.g., B.Sc. Maj. Chem. Minor Biology):	
Level: (circle one)	U0 / U1 / U2 / U3
I have not applied for another 396 course this term. **Student signature:**	
Date:	

4 Approvals. (1) Print names and sign. (2) Notify Office for Undergraduate Research in Science. (3) Give student code to register for course on MINERVA.

Supervisor:	
Date:	
I certify that this project conforms to departmental requirements for 396 courses. **Unit Chair, Director, or designate**	
Date:	