



Putting It Into Action: NB PDF Annotation Tool

Subject Number: **6.055**
Instructor: Sanjoy Mahajan
Subject Name: Art of Approximation in
Science and Engineering

Overview

Professor Sanjoy Mahajan's course "Art of Approximation in Science and Engineering" relies on students closely reading Mahajan's notes before class. If students couldn't prepare through reading and formulating questions, the lectures would degenerate into dictation.

Educational Challenges

Problem: How to ensure that the students were studying the assigned text and coming to class prepared as well as how to gauge the extent to which students didn't understand the text and identify areas of difficulty.

Solution: Mahajan required students to read the notes from his draft textbook using the NB pdf annotation system. For each reading assignment, he required every student to make a "decent effort" to make a relevant comment, to ask a question, or to answer a fellow student's question. Not only did NB allow students to jot notes in the margins of text (either in the form of a comment, question, or answer) but multiple students were able to discuss or "vote up" a question thus alerting Mahajan to areas of confusion for many students.

Results: Student engagement with the NB website snowballed. Because students were asking and answering questions, NB became the destination for timely answers. Because NB was monitored by course staff, areas of common confusion were identified and clarified in the next class meeting.

Comments and questions revealed valuable perspectives from the students' point of view. These inputs helped Mahajan refine and improve the notes for subsequent iterations of the course as well as revise the class notes into a (freely licensed) textbook published by MIT Press.

Key Take-Aways

Collaborative annotation of pre-lecture readings promotes peer-to-peer learning and encourages students to collectively highlight areas of confusion. In addition, student comments improve later offerings of the course.



Professor Sanjoy Mahajan
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