CS 322: Quiz 5

Friday, July 26, 2002

The rules for this quiz are as follows:

- **Write your name and student ID number in the upper-right hand corner of the quiz.**
- This quiz will last for 15 minutes.
- Show **ALL** work for partial/full credit. This includes any definitions, mathematics, figures, etc.
- The quiz is closed book and closed notes, and no calculators are allowed on the quiz.
- No collaboration of any kind is allowed on the quiz.

1. (10 points) In lecture, we saw how to derive the "best-fit" line through m data points of the form $(x_i, y_i), i = 1 : m$. Recall that "best-fit" meant in the least-squares sense. Derive the equations that, when solved, yield the "best-fit" parabola through the m data points. Assume the parabola is given by $p(x) = ax^2 + bx + c$. Write your answer as a matrix system of equations. You do **NOT** need to solve the system.