



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Zarathustra E. Brady	Project Number S1202
Project Title Can a Computer Predict a Human's Decisions?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To show that a human's behavior, even when he/she is trying to act randomly, is predictable, and to create a program which can model and predict a human's reactions in certain situations.</p> <p>Methods/Materials I tested this out with the game Rock, Paper, Scissors. I used a Hidden Markov Model (HMM) to create predictions of the human's choices given previous choices. People would play it in four different ways: short games where they saw the computer's choices, long games where they saw the computers choices, short games where they didn't, and long games where they didn't.</p> <p>Results After testing it on one hundred people, I found that the computer always won if the game was long enough, and did much better when the human did not see the computer's choices.</p> <p>Conclusions/Discussion A computer can predict a human's decisions. This shows that human's are predictable (statistically), and it is possible to model them with a computer.</p>	
Summary Statement I used a Hidden Markov Model to predict a human's choices in the game Rock, Paper, Scissors.	
Help Received My computer mentors told me about Hidden Markov Models.	