



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

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| Name(s) Cade Pretorius | Project Number 33912 |
| Project Title Programmatic Signature Fraud Detection | |
| Objectives/Goals The reason I did my experiment was to determine if a computer program can prevent signature fraud. In a grocery store, for example, you often have to sign when a credit card is used. Using this program, someone can sign, and the signature can be compared to a database which holds their previous signature, thus preventing another person from stealing their money. Abstract Methods/Materials Method: 1. Reset all variables. 2. Sign to capture first signature position and interval data points. 3. Save signature to file. 4. Return to program. 5. Click "Second Signature" button. 6. Sign to capture second signature position and interval data points. 7. Perform Steps 2-4 again. 8. Click "Result" button. 9. The program copies, saves, and aligns starting point and other X-Y coordinates. 10. Record results. 11. Repeat Steps 1-10 for each trail. Materials: HP G60-441US Notebook PC; Samsung tablet/computer to sign on; A computer program written in JavaScript and HTML5; Stylus to sign with Results When the same person signed, the percentage similarity was approximately 95%. With different people signing, the similarity was always below 90% and going as low as -91,528,438,830,282.2%. Conclusions/Discussion The results from my experiment prove my hypothesis. The computer program was able to distinguish between people signing. The program that I wrote met all of the design specifications I had in mind. | |
| Summary Statement My Science Project tests whether a computer program can differentiate between two signatures and detect the same signatures. | |
| Help Received I would like to acknowledge my Dad for helping me through some of the bumps I had with programming. My Mom gave input as to the organization of my display board. | |