



**Davidson Fellow
Aditya Palepu**

(\$10,000 Scholarship Recipient)



Personal Info

Age: 17
Oakton, Virginia

School, College and Career Plans

A graduate of Thomas Jefferson High School for Science and Technology, Aditya is attending Duke University this fall where he plans to double major in electrical and computer engineering, and economics.

Davidson Fellows Submission (*Technology*)

In his project, "A Heterogeneous Mixture Model for Unsupervised Pattern Classification," Aditya developed a pattern classification algorithm that extracts linear and Gaussian relationships from raw data using a bottom-up approach. Given any data set, all possible models are generated, iteratively weeded down, and refined to better fit the data. This algorithm is effective on benchmark Iris data and synthetic distributions, and was designed so the model library can be expanded to more data sets. Aditya's work has applications in facial/object recognition, data mining, trend analysis, and was used to classify a Washington, D.C. crime database revealing the clustering of criminal activity.

Biography

Aditya took a number of Advanced Placement courses in high school and worked in the Naval Research Laboratory's Information Technology Division this summer. His advanced knowledge in statistics, computer science, and math proved especially useful for the completion of his Davidson Fellows project. And though Aditya is well-versed in the programming languages of Java and Ruby, he had to learn C++ on the fly due to the vast amounts of data sets he was working with.

Aditya is in the later stages of receiving a patent for his Davidson Fellows project. He feels that a strong work ethic is integral to high performance in any area. He also creates a plan of action to give him a clear understanding of what direction he is headed and what he needs to do to achieve his goal.

Aditya was involved in Model United Nations and Odyssey of the Mind. He is also a self-proclaimed "sports fanatic" playing soccer, volleyball, ultimate frisbee and track. Aditya plays basketball and football with friends, and is an avid fan of the Washington Wizards and Washington Redskins.

Aditya enjoys spending his free time with friends and family, watching movies and eating at Mexican restaurants.

Please see next page.



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(Cont.)

Honors/Awards

- 2009 Davidson Fellow
- 2009 Intel Virginia State Science Fair, Category Winner
- 2009 Intel Fairfax County Regional Science Fair, Category Winner
- 2009 Intel School Science Fair, Category Winner Computer Science
- 2009 Congressional Award – Silver Medal
- 2008-2009 Siemens Semifinalist
- 2008 Naval Research Laboratory's Intern Competition, First Place
- 2007 Intel International Science & Engineering Fair participant
- 2007 Intel Virginia State Science Fair, Category Winner
- 2007 Intel Fairfax County Regional Science Fair, Grand Prize Alt., Category Winner
- 2007 Forensics Oratory Competition, State Finalist
- 2007 Intel School Science Fair Category winner, Behavioral Science
- 2006 Optimist Club - Best Speech Scholarship Winner
- 2006 Optimist Club - Essay, First place at District Level

Community Activities

Aditya volunteered more than 100 hours at the Patrick Henry Library as the Internet lab assistant. For this service, he achieved the Silver Congressional Award and is working towards the Gold Medal. He also designed a website for the Optimist Club of Manassas and was a chemistry tutor.

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