



SAMUEL PRITT

Home School

HOMETOWN: Walkersville, Maryland

PROJECT: Geolocation of Photographs by Means of Horizon Matching with Digital Elevation Models

FIELD: Computer Science

MENTOR: Dr. Mark Pritt, Lockheed Martin

“Science will always outdo your expectations. That’s what I love about it.”

Geolocation is the process of determining where a photograph was taken. The horizon curve in a photograph is akin to a fingerprint and is often distinctive enough to accurately pinpoint the photograph’s location in an extremely large search area. In his computer science project, Sam Pritt combined his two passions of computer programming and image processing. He developed an algorithm for extracting the photograph’s horizon curve and matching it with horizon curves generated from digital elevation models. The research has broad potential applications, from organizing photos on the web to robot navigation and counterterrorism.

Sam, a senior, is a student intern in the Frederick National Lab for Cancer Research and a student member of the Institute of Electrical and Electronics Engineers (IEEE). Passionate about playing the piano, he is especially proud of winning the Frederick Regional Youth Orchestra 2012 Concerto Competition. He presented a paper at the IEEE 2012 International Geoscience and Remote Sensing Symposium in Munich, Germany and was a finalist and second place grand award winner at the 2012 International Science and Engineering Fair. A National Merit Semifinalist, Sam plans to major in computer science and pursue a career in chemical or biomolecular engineering.