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**Simonson**

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- (54) **IMAGE REGISTRATION WITH UNCERTAINTY ANALYSIS**
- (75) Inventor: **Katherine M. Simonson**, Cedar Crest, NM (US)
- (73) Assignee: **Sandia Corporation**, Albuquerque, NM (US)
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- (58) **Field of Classification Search** ..... 382/128-132, 382/199, 190, 293-294  
See application file for complete search history.

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*Primary Examiner* — Vu Le  
*Assistant Examiner* — Andrae S Allison  
(74) *Attorney, Agent, or Firm* — Carol I Ashby

(57) **ABSTRACT**

In an image registration method, edges are detected in a first image and a second image. A percentage of edge pixels in a subset of the second image that are also edges in the first image shifted by a translation is calculated. A best registration point is calculated based on a maximum percentage of edges matched. In a predefined search region, all registration points other than the best registration point are identified that are not significantly worse than the best registration point according to a predetermined statistical criterion.

**16 Claims, 11 Drawing Sheets**

