

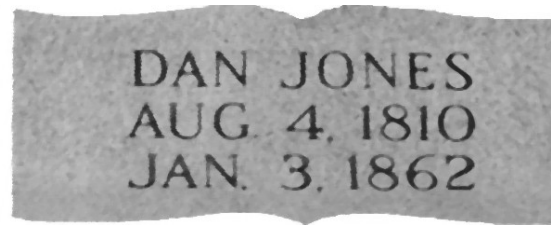
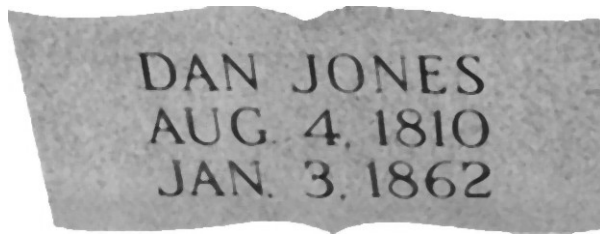
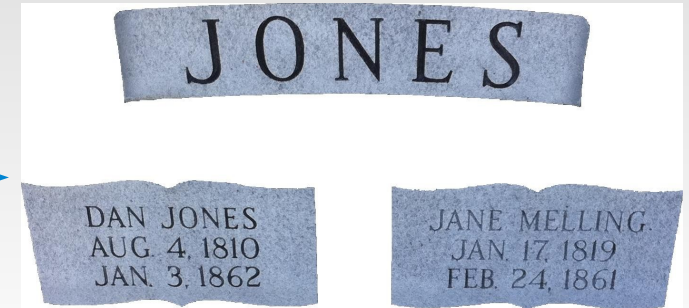
Capstone

*Gather Valuable Information on Headstones
as an Automated Process*

Cameron Christiansen
William A. Barrett

Brigham Young University

Overview



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DAN JONES
AUG. 4, 1810
JAN. 3, 1862
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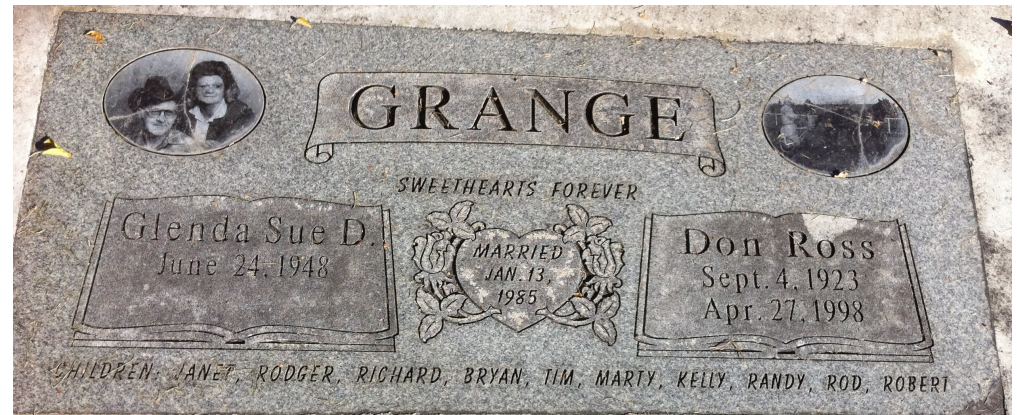
Introduction

- Information available
 - Genealogical information
 - Headstone location
- Need for automated process
 - Number of headstones
 - Challenge of manual data gathering



Related Research

- Noisy OCR
- Commercial apps
 - Google Goggles
 - Business Card Readers



Methods

- Photo capture
- Segmentation
- Image Filtering
- OCR

Photo Capture

- iPhone 4
- Basic needs
- libexif to extract geotagging

Segmentation

- Watershed tobogganing
- Determining areas of interest
- Graph cut on TRAPs

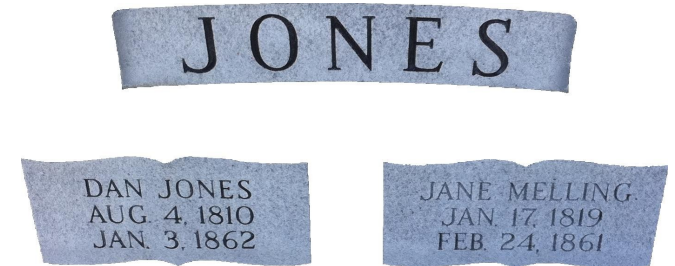
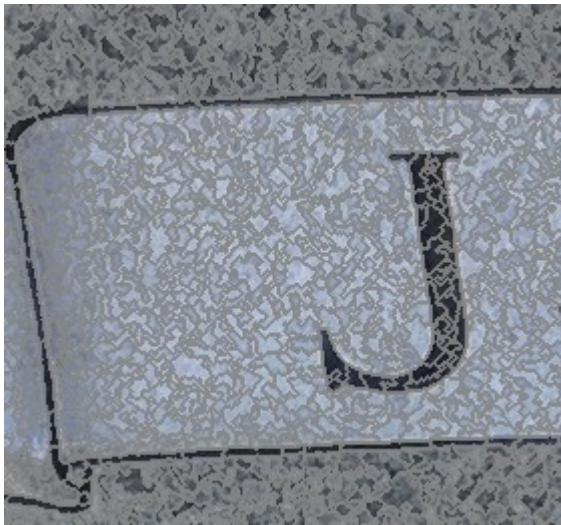
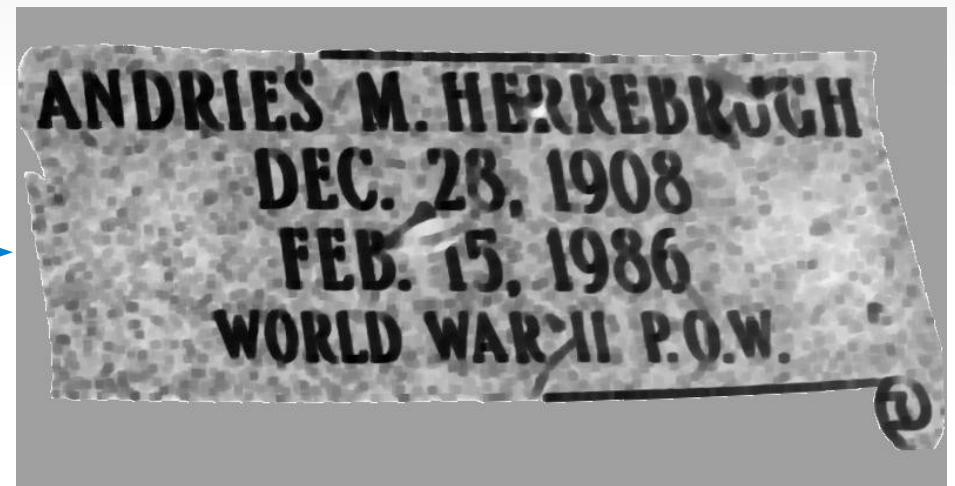
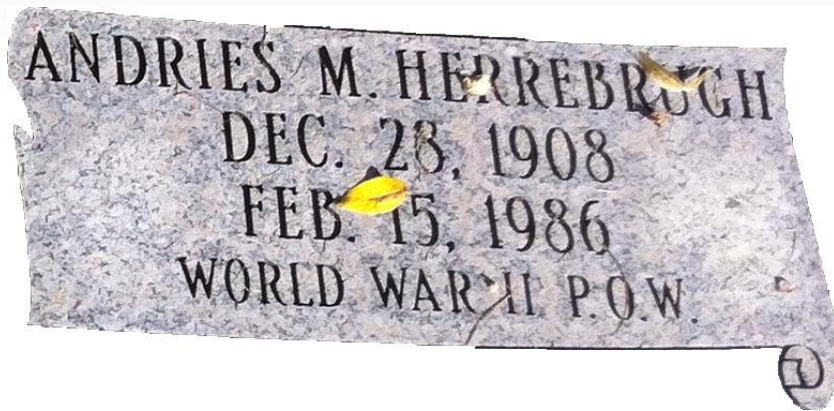


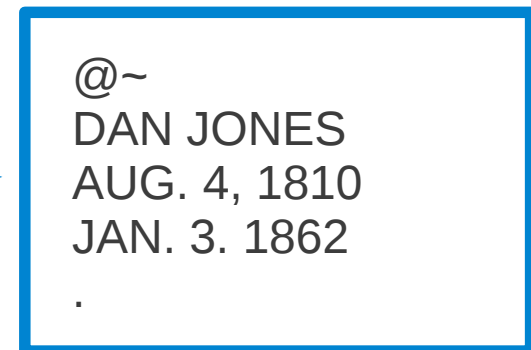
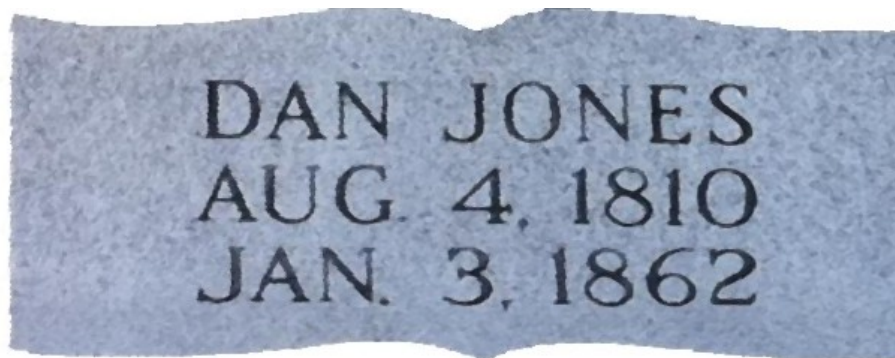
Image Filtering

- Rotatation
- Blurring

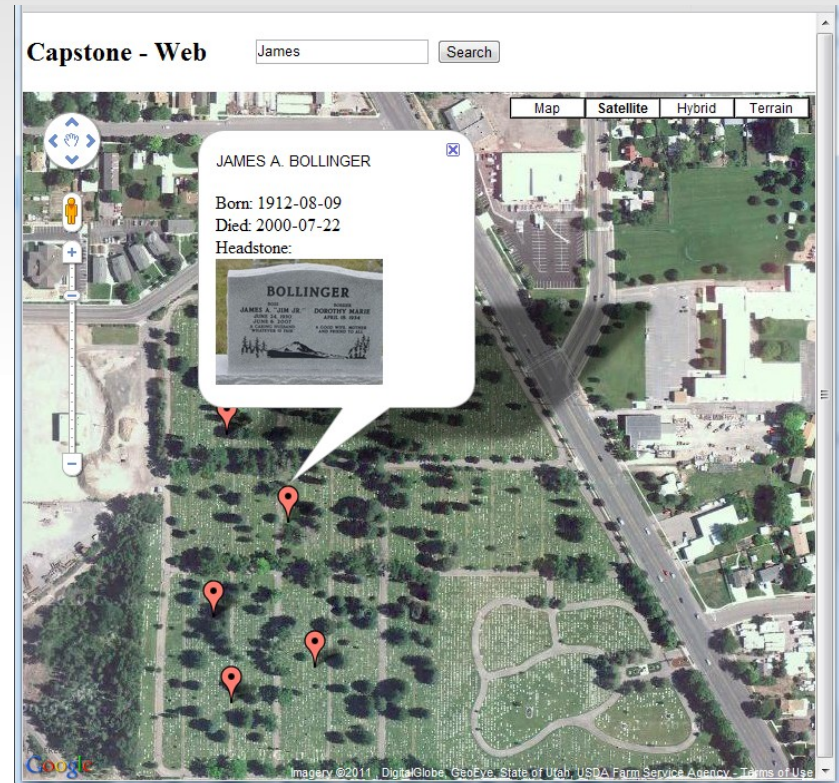
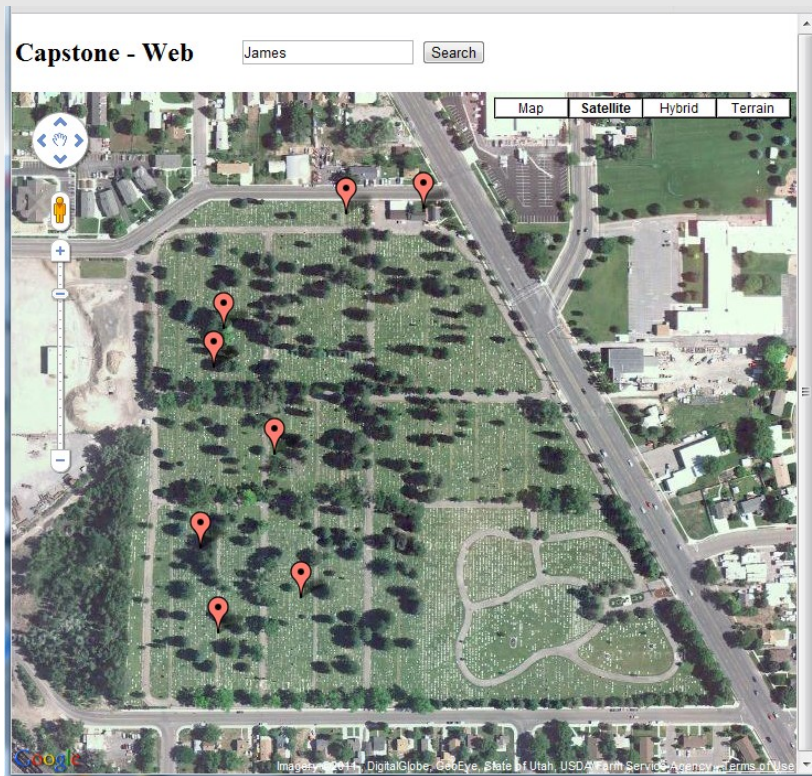


OCR

- Importance of Image Filtering
- Common fonts
- Tesseract OCR



Application



Future Work

- Automated segmentation
- Noise removal
 - Shadows and glares
 - Stone texture, artwork
- Text rectification
- OCR engine
- Integration into mobile app

Conclusion

- Automate information extraction
 - Geotagging
 - Segmentation
 - Image Filtering
 - OCR
- Index the information found