

WINE-O.AI: Computer Vision Assisted Wine Recommendations

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Ending Wine Ruts with Computer Vision



Goal: Wine-label based database and recommendation system

Data Retrieval & Processing Pipeline

1

Scraped 50K Wine Labels & Reviews



2

Detection of Features with SIFT



3

Feature Clustering & Inverted Index



4

Image Alignment with RANSAC



5

Recommendation System & Application



Teaching Computers to See



Scale Invariant Feature
Transformation (SIFT)

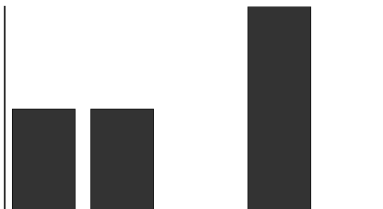
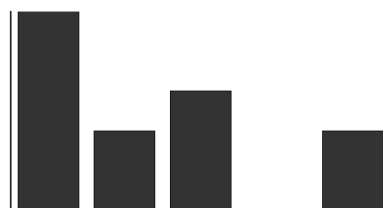


Random Sample
Consensus (RANSAC)

Fingerprinting for Fast Retrieval

Wine

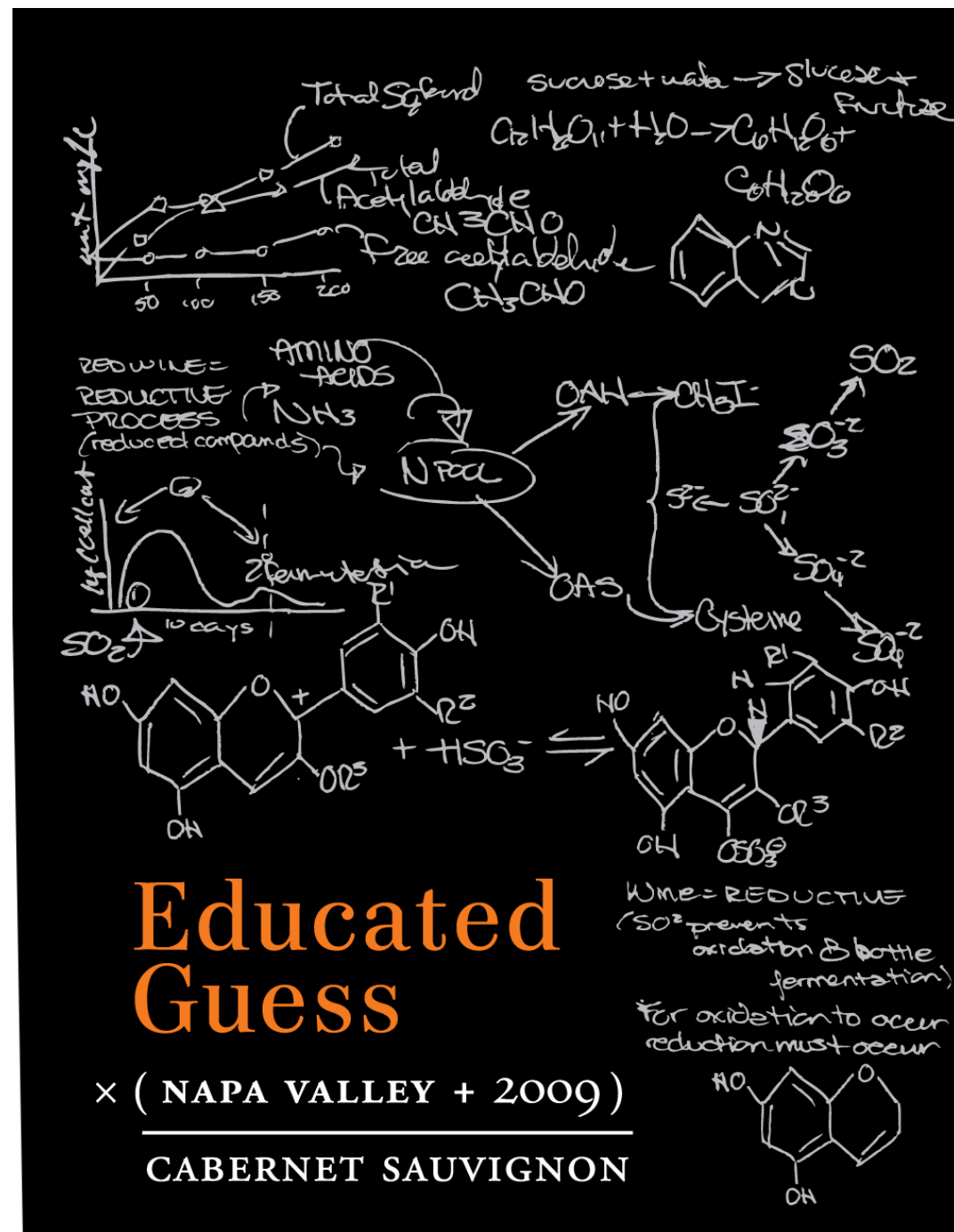
Clusters



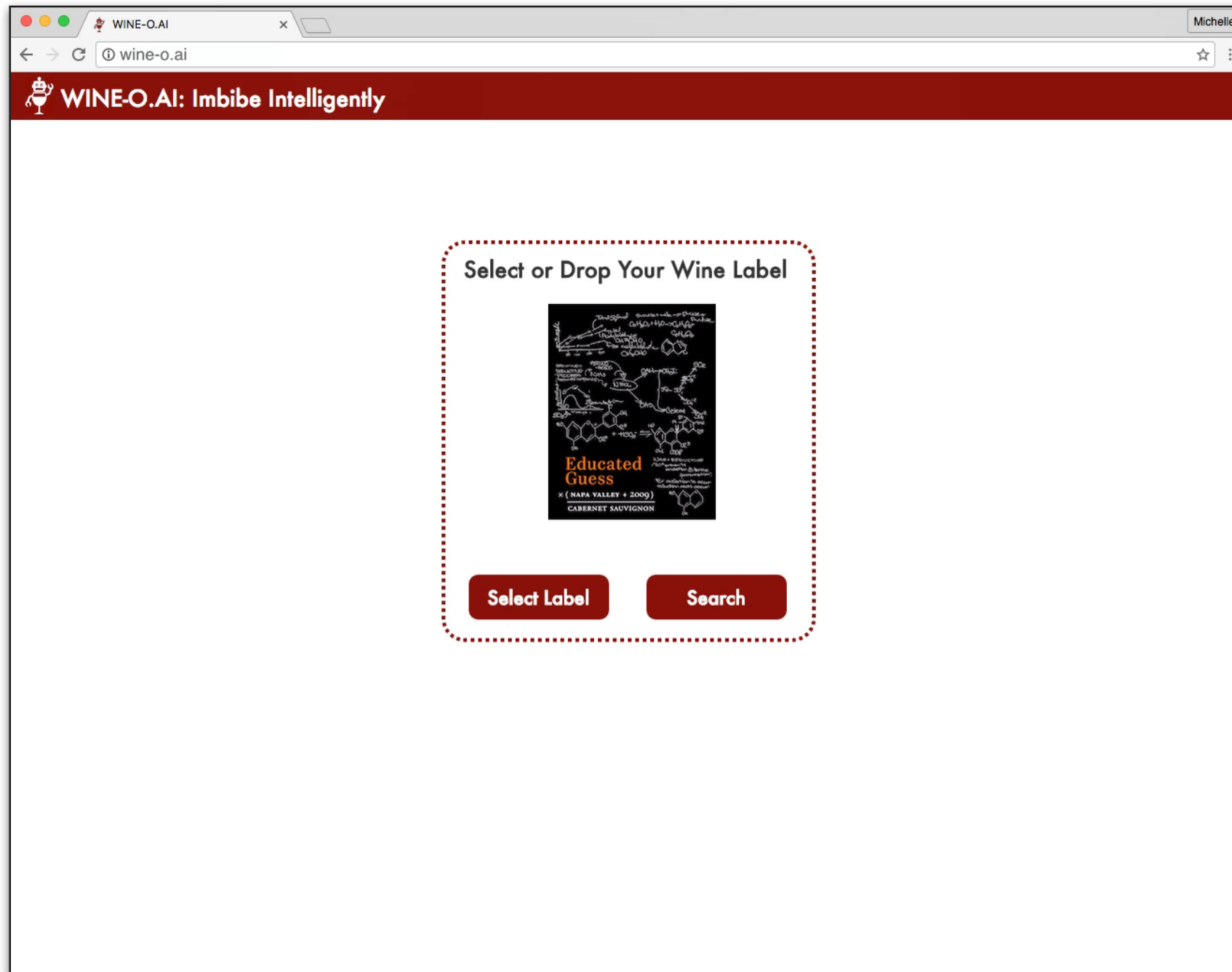
Fingerprinting for Fast Retrieval



WINE-O.AI Demo



WINE-O.AI Demo



WINE-O.AI Demo

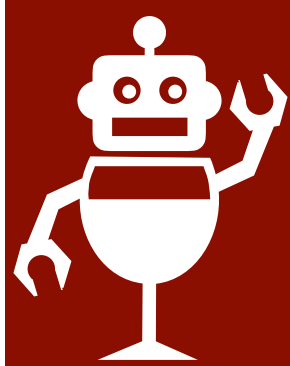
The screenshot displays the WINE-O.AI web application interface. The browser tab is labeled 'WINE-O.AI' and the address bar shows 'wine-o.ai'. The page has a dark red header with the logo 'WINE-O.AI: Imbibe Intelligently' and a 'Search' button. The main content area is divided into several sections:

- Wine Information:** Features an 'Educated Guess' for 'Cabernet Sauvignon 2009' from 'Roots Run Deep Winery' in 'Napa Valley, CA'. It includes a 'Rating' of '90% Wine Advocate'.
- Wine Label:** Shows a wine label for 'Educated Guess' (Napa Valley + 2009) Cabernet Sauvignon, which features a complex chemical structure diagram.
- Winery Location:** A map of California with a red dot indicating the location in Napa Valley.
- Review:** A text review stating: 'This Napa Cab will certainly delight a bargain hunter, especially knowing a good portion of the fruit is sourced from a Beckstoffer vineyard. Surprising complexity for a bottle that runs \$25 or less—the hallmarks of high end Napa fruit are here. Boysenberry envelopes the palate with just a hint of oak. Dark hues, young tannins and well balanced.'
- Wines You May Love:** A list of recommendations:
 - Sweetwater Ranch, 2009 Cabernet Sauvignon, Levendi Winery, Napa Valley, CA
 - Gaba do Xil, 2011 Mencia, Telmo Rodriguez, Spain
 - Smith & Hook, 2013 Cabernet Sauvignon, Hahn Family Wines, Soledad, CA
- Purchase Nearby:** A section for 'Columbus Wines & Spirits' at 730 Columbus Avenue, New York, NY 10025, featuring a logo with a bunch of grapes.

The footer of the application credits 'by Michelle L. Gill'.

Conclusions

- Accurate fingerprinting of wine labels achieved using computer vision and machine learning
- Search and recommendation engines implemented in web application
- Foundation of mobile application and wine cataloging system



WINE-O.AI: Imbibe Intelligently

Thank you!

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