



R-IBES: “*Reverse-Image Biographical Entity Search*”

Jacob Weber



Generated by Stable Diffusion



What is R-IBES?

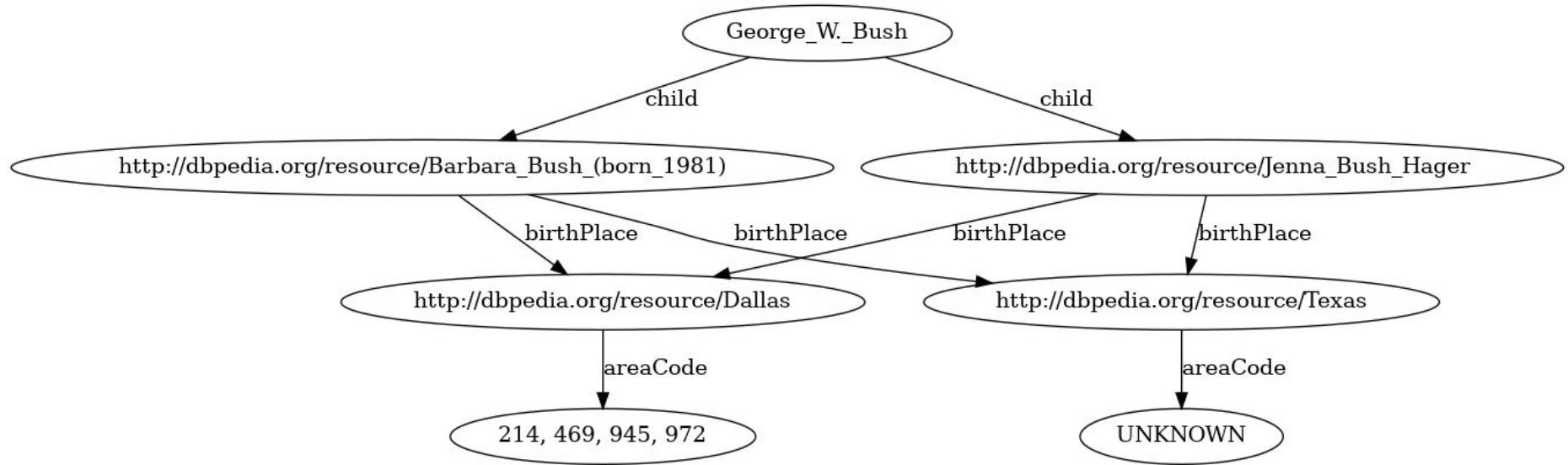
- The **first** reverse-image biographical search engine
- Uses advanced facial recognition algorithms locally and in the cloud to match faces in ~0.684 seconds
- The search engine gets smarter each time it's used by saving new faces to its database
- Takes advantage of a JSON-ified Wikipedia clone called "DBpedia" to handle biographical search queries for the identified person



How does R-IBES work?







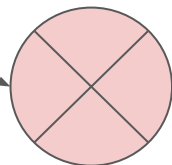


**Search
Locally**



Match Found

Jacob Weber



Not Found

**Search
AWS**



Match Found



Not Found

**User contributes
name**



DBpedia

**Name and query
are combined
and searched!**



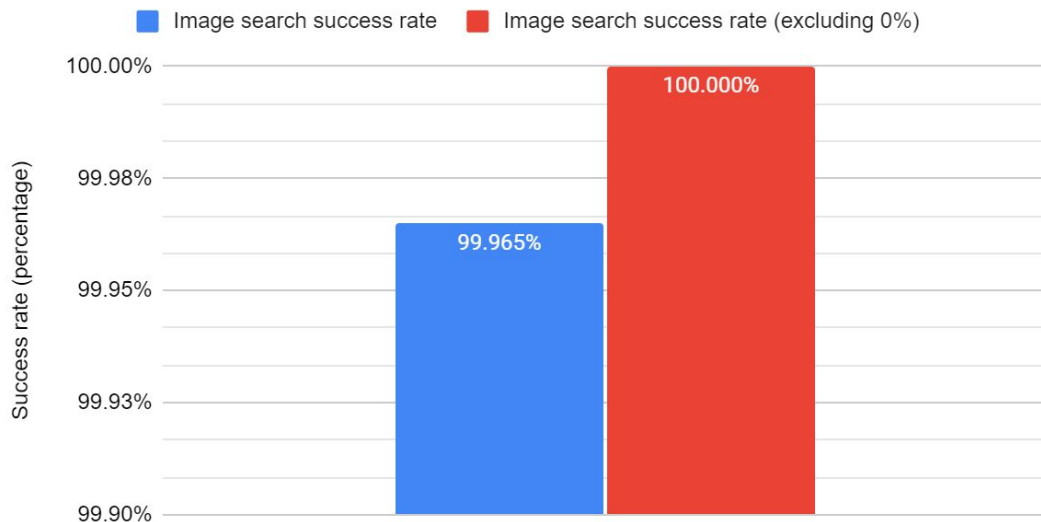
User declines to contribute



How does R-IBES perform?

Average Image Search Success Rates

Calculated using 5,716 unique individuals with 13,152 images



Average time per image
match: 0.684 seconds

Standard deviation: 0.079
seconds



Possible next steps...

- Generalize the algorithm to support object recognition and multiple faces
- Support for natural language queries
 - Possibly use a LLM to match NL to DBpedia tags?
- More efficient encoding lookups through optimized hashed data structures
- Automate Sphinx documentation website refreshes and successfully host a GitHub Pages site for it
- Optimize the project for external use and contributions without a provided DB file
- Run computations on a remote server rather than a client machine allowing for more complex and intensive workloads