

Tailored Tails

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**Find the right dog for
your lifestyle.**

Meet The Team

Michael Giraldo (Team Lead): BS CompSci

Mohamed Kisha: BS CompSci

Rickny Sanon (Product Owner): BS CompSci

Andres Garcia Vicalles: BS CompSci



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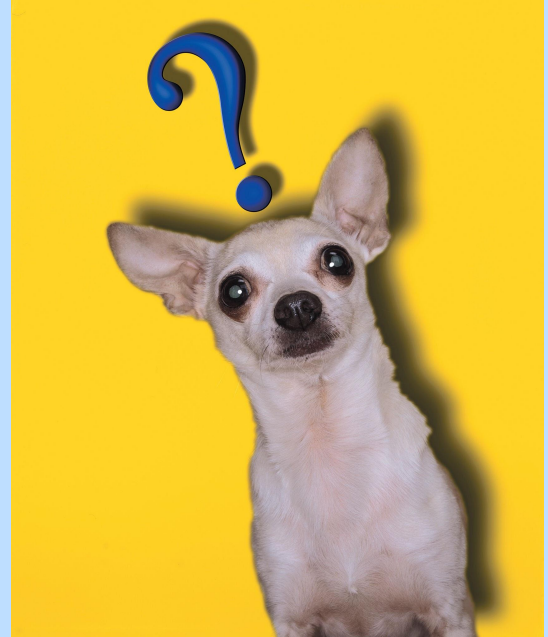
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Problem

Finding the right dog is difficult because adopters often rely on appearance instead of lifestyle compatibility. This leads to mismatches, returns, and overcrowded shelters.

Adopters need a smarter way to identify dogs that fit their routine, energy level, and living environment.



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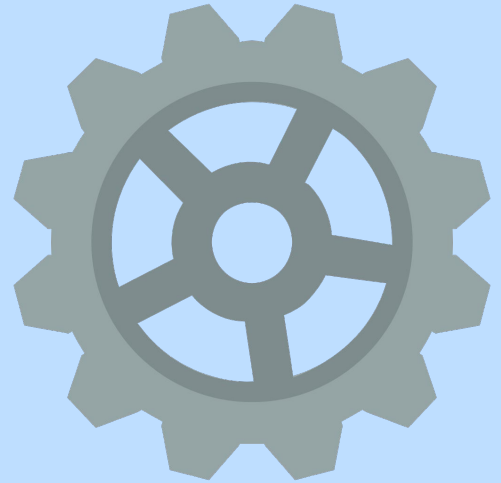
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What is the current system?

Shelters list dogs with basic descriptions and photos, but there is **no personalization**.

Matching depends on guesswork or manual advice from staff, which varies widely.

Existing platforms focus on searching by breed or size—not lifestyle, habits, or daily routine.



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What's Wrong?

Because there is no structured compatibility system:

- Adopters pick dogs that don't match their lifestyle
- High return rates increase shelter stress
- Dogs get overlooked because descriptions aren't standardized
- Shelters cannot easily compare or recommend good matches



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There is no data-driven way to ensure better adoption outcomes.

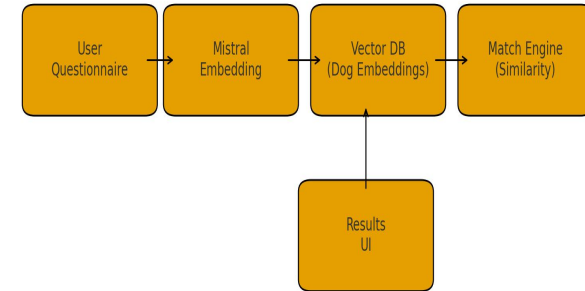
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Engineering Process

We followed a structured engineering approach:

1. **Requirement Gathering**
Identified adopter needs (lifestyle-based matching) and shelter constraints (data formatting, dog traits).
2. **System Design**
Built a pipeline using Mistral embeddings to represent adopters and dogs as comparable vectors.
3. **Implementation**
Frontend in Next.js, backend using Firestore + OpenRouter for embeddings.
4. **Testing & Refinement**
Ran multiple surveys, validated match rankings, and refined the scoring model.



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Possible Solutions

- **LLM Embedding Matching:** Convert user survey -> natural -> language summary -> embedding; compare to precomputed dog embeddings.
- **Rule Based Filter & Heuristics:** Explicit thresholds for energy size, kid tolerance, space, fast but brittle.
- **Hybrid(Embedding + Rules):** Embeddings for soft ranking, rules to enforce hard constraints (e.g no large energetic dog for small apt)
- **Shelter Staff Dashboard:** Give shelter staff recommended candidates + explanation & override controls for final human review.



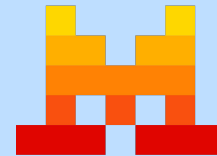
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What We Decided On

- **Primary approach:** LLM based embeddings (Mistral via OpenRouter -> 5 dimensional lifestyle vectors.
- **Matching:** Cosine similarity to rank nearby shelter dogs.
- **Storage & infra:** Firestore documents with vector arrays; Next.js frontend; Firebase Auth for sign-in.
- **Operational flow:** Periodic scraper for Miami Dade shelter data -> offline dog embedding updates -> runtime user embedding + fast ranking.



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Why?

- **Captures nuance:** Embeddings convert freeform survey answers into comparable vectors (more expressive than fixed rules).
- **Explainable matches:** We attach short textual explanations (why this dog fits) derived from the summary used for embedding..
- **Fast & scalable:** Embedding generation 3-8s, ranking <1s for datasets ≤ 300 dogs meets our latency goals.
- **Privacy & safety:** Store only UID + embedding + short summary; no raw answers retained, auth outsourced to Firebase/Google.
- **Practical:** Works with current shelter constraints (no public API) offline scrapping + scheduled embedding updates.



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How It Works Part 1.

With our user logged in, we ask them to take a survey. The survey consist of lifestyle-oriented questions to collect data to estimate which dogs are most compatible



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Lifestyle Survey

Rate each question from 1 (low) to 10 (high)

1. How much time do you spend outdoors?

1 2 3 4 5 6 7 8 9 10

Low

High

2. How active is your lifestyle?

1 2 3 4 5 6 7 8 9 10

Low

High

3. How much time do you spend at home during the day?

1 2 3 4 5 6 7 8 9 10

Low

High

How It Works Part 2.

With the data from the survey, we feed it into an LLM to create a small 5 dimensional embedding. Each of the dimensions represents a critical compatibility trait for owning a dog. Whether the house is clean, kids are present, guests are frequent visitors, etc...

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Your Personality Radar



Summary: Moderately active with a preference for cleanliness and some social interaction, having adequate time and space for dog care.

How It Works Part 3

The dogs in the Miami-Dade Animal services shelter are also embedded into 5 dimensional vectors. To create matches, we calculate the distance between the two embeddings. When we do this to all the dogs, we can rank them based on compatibility with the user



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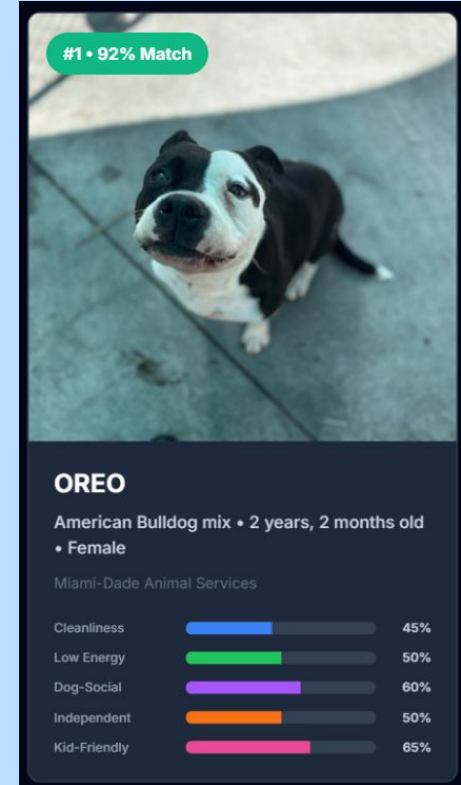
How It Works Part 4

The dogs are returned in order of compatibility and their display cards are a hyperlink to their adoption page at their shelter!

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A dog adoption card for a dog named Oreo. The card features a photo of a black and white American Bulldog mix sitting on a concrete surface. In the top left corner of the photo, there is a green badge that says "#1 • 92% Match". Below the photo, the dog's name "OREO" is displayed in bold white text. Underneath the name, it says "American Bulldog mix • 2 years, 2 months old" and "• Female". Below that, it says "Miami-Dade Animal Services". At the bottom, there are five horizontal bars representing different compatibility metrics, each with a colored bar and a percentage value to the right.

Metric	Percentage
Cleanliness	45%
Low Energy	50%
Dog-Social	60%
Independent	50%
Kid-Friendly	65%

Why It's Better

- **Lifestyle First Matching:** Matches pets to the adopter's daily routine rather than appearance or breed stereotypes.
- **Higher Adoption Success:** Reduces mismatches by focusing on compatibility leading to fewer returns and safer homes.
- **Standardized Dog Profiles:** Converts uneven shelter descriptions into uniform embeddings that can be compared fairly.
- **Transparent Recommendations:** Each match shows a short explanation so users understand why a dog fits their lifestyle.
- **Privacy Preserving Design:** No personal data stored only a UID, and embedding, and a short summary.



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How To Use

Simply go to <https://tailored-tails-nine.vercel.app> and create an account and/or sign in. When you sign in, your dashboard will prompt you to take our survey. Once your survey is complete, an LLM turns it into an embedding and creates a personality summary. You can then browse dogs tailored to you!

TailoredTails matches adopters with dogs from nearby shelters based on lifestyle, schedule, and preferences. The goal is to reduce failed adoptions and help both people and dogs find better fits.

[Start Matching](#)

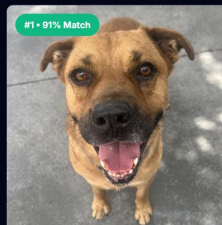
[Create Account](#)

[Sign In](#)

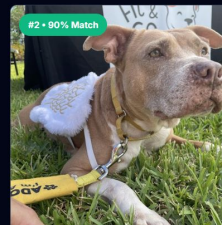
- Uses real shelter data (e.g., Miami-Dade).
- Matches based on lifestyle, not just appearance.
- Built as a full-stack CS capstone project.

Your Best Dog Matches

Ranked from perfect fit to great companion • 736 dogs analyzed



RAMON	
German Shepherd Dog mix • 6 years old • Male	
Miami-Dade Animal Services	
Cleanliness	40%
Low Energy	60%
Dog-Social	80%
Independent	50%
Kid-Friendly	60%



COOKIE	
Pit Bull Terrier • 8 years old • Female	
Miami-Dade Animal Services	
Cleanliness	50%
Low Energy	60%
Dog-Social	70%
Independent	50%
Kid-Friendly	70%



CANELO	
Terrier mix • 3 years old • Male	
Miami-Dade Animal Services	
Cleanliness	50%
Low Energy	60%
Dog-Social	70%
Independent	50%
Kid-Friendly	70%

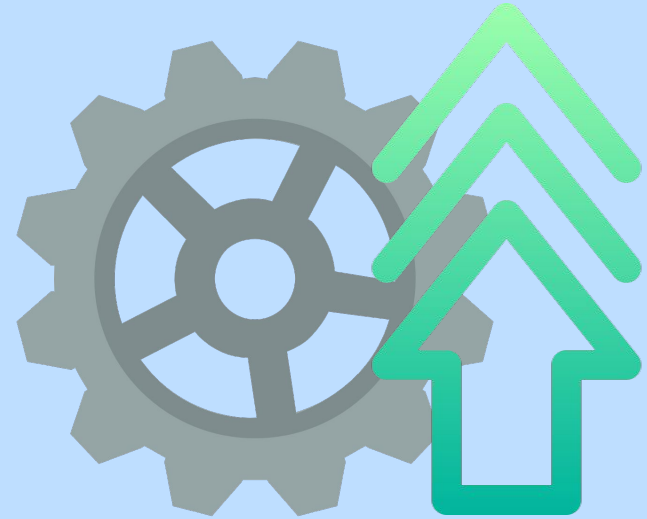
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Future Improvements

- Automatic Updating of New Dogs
- Custom transformer for embeddings
- Multiple Shelters
- Social Media Sharing



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Thank You + Q/A

Thank you so much for showing an interest in Tailored Tails! We appreciate your time and would love to answer any questions!



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