

Past problem - Frrole.ai



Objective: A product capable of extracting high-level semantic context from social data in real-time and offering API infrastructure for multi faceted search access.

Role I played: I was the technical co-founder, leading an engg team of 9 devs and responsible for the maintenance, design, architecture, performance, and reliability of our entire technical stack.

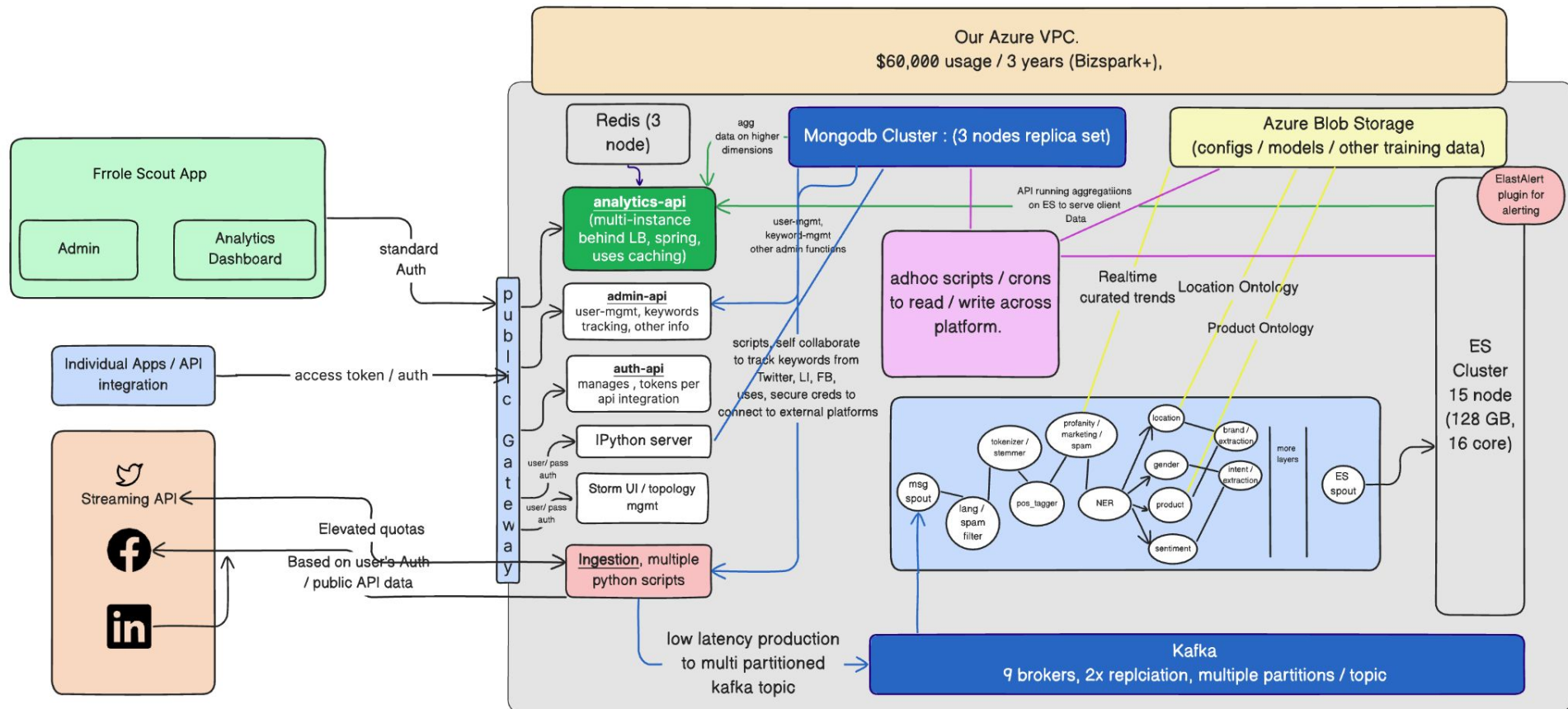
Outcome: Within a year, we scaled our compute to handle 50K data points per second and enabled historical data search for the past 5 years. This led to an ARR of \$1.5 million within 2 years.

Key learnings:

- **Tech:** Scaling data-intensive applications requires using the appropriate tools.
- **Product:** Engage with customers early; direct communication is more effective than assuming their needs.
- **Business:** Operating a SaaS business in India is challenging due to complex pricing and collection issues.

Why did I chose this: A demanding use case in limited tech landscape with constant uncertainty and frequent re-prioritisation needed to provide great customer experience. Use open source toolchains to avoid costs and make efficient trade-offs. Design and architect systems really well, since use case could scale to 100x very fast. Also got lot of experience in tuning and deploying AI / ML toolchains at large scale.

Past problem #1 - Frrole.com (architecture diagram)



Past problem - Scaling Exclusion List Validation

Problem Statement: Validate 1 million HCPs against exclusion lists as soon as they are published by federal / state agencies.

Objective: Optimize the process of validation for 2 of most important lists: OIG / SAM from 1 month to daily. In doing so design a process which allows for faster onboarding for additional lists.

Existing Solution: Very slow: only ~40K validated everyday. Long running: 2 hours to complete. Lack of observability. Carries huge legal risk.

Role Played:

Prioritising: Assessed the risk, wrote the investment doc to help prioritise the problem with all stakeholders involved (product, legal, docs). Also provided initial planning / estimations.

Manage: Planned a 3 sprint (6 weeks) roadmap (2 devs) to release. Didn't disrupt our current important commitments. Borrowed bandwidth from OE and other less urgent workstreams.

Solutioning: Designed initial solution with Senior dev. Pushed him to think from first principles. Closely reviewed the work and provided continuous guidance on improvements.

Learning: ~~Good~~ Great solutions are there, find them. Design then Implement !

Outcome:

- From validating ~40K users / day / 2 hours → 1 million users / day / 4 minutes. Onboarded ~20 additional lists all meeting <5 mins SLA in next 8 months. Takes 2 days to onboard a new exclusion list.
- By leveraging our team's success, we secured another high-impact project (Priority Access) that directly influenced three key business metrics: Fill Rate (+7%), Reliability (+3%), Churn (-0.8%)