Search & Retrieval

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Problem

- **Real world data is multidimensional, noisy and sparse!**
- **Simple fast, fuzzy computations are needed!**
- Dense embeddings can not be robustly composed
- Hot shot encodings blow up in size

Data types:

- Medical
- Behavioural
- Telemetry (GPS+...)
- ...

Solution

Efficient Alternative

- High dimensional computing & Symbolic logic
- Algebra with binary, Sparse Distributed Memories

Encoding & Retrieval:

- Simple modelling of events or sequences as fingerprints (without prior knowledge)
- Compression rates and format allowing for easy parallelisation
- Efficient, fuzzy search

Examples:

GPS:

- GPS search 100× faster
- GPS data can be enriched with other features, like gender
- Increase of speed + richer modelling
  $\Rightarrow$ richer recommendations, analyses, ...

Neurotrophic Labs — Medicare Data:

Medical Doctor can explore scenarii within $\approx$ 1 second:

1. patient background
2. patient medical history
3. potential sicknesses
4. basic correlations/stats between 1–2 & 3