Figure 1: data-nodes arround a context domain space (mind's eye)

ACTIVE-MEMORY

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C3D2

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→ **https://github.com/santex/active-memory-paper**

Short Description

Procreating data, under fitness consideration, in form of **semantic** micro-structures within a conceptional domain. controlled by a human users request.

The projects goal is to establish a way to compound information quality , quantity in a genetic fashion.

To organise knowledge like a biological organism. within a data population.
on data-nodes which are organisation, in a context domain space. Goal is to facilitate procreation in a genetic fashion. in essence to make better information from information.
Desired result of all efforts is to make better data from data by default.
It also has very interesting organisational properties, each structure is bound on a concept or more.
Side effect of the genetic fitness evaluation is that all root nodes and end nodes are known upfront reducing query distance as each end-node is same distance. It enables us to work kind of parallel.

New Terms

micro-structure
a micro-structure is a abstract entity describing **any concept**
the information is obtained via **WORD-NET**

key-stone
a key-stone is the root of a micro-structure

example:
a micro-structure with the key-stone existence

```
<existence>
- Cosmos
- Unit
- Universe
- Physical_entity
- Object
- Physical_object
```

```
- Nature
- Macrocosm
- Natural_order
- World
- Whole
- Natural_object
- Closed_universe
- Existence
- Creation
- Entity
```
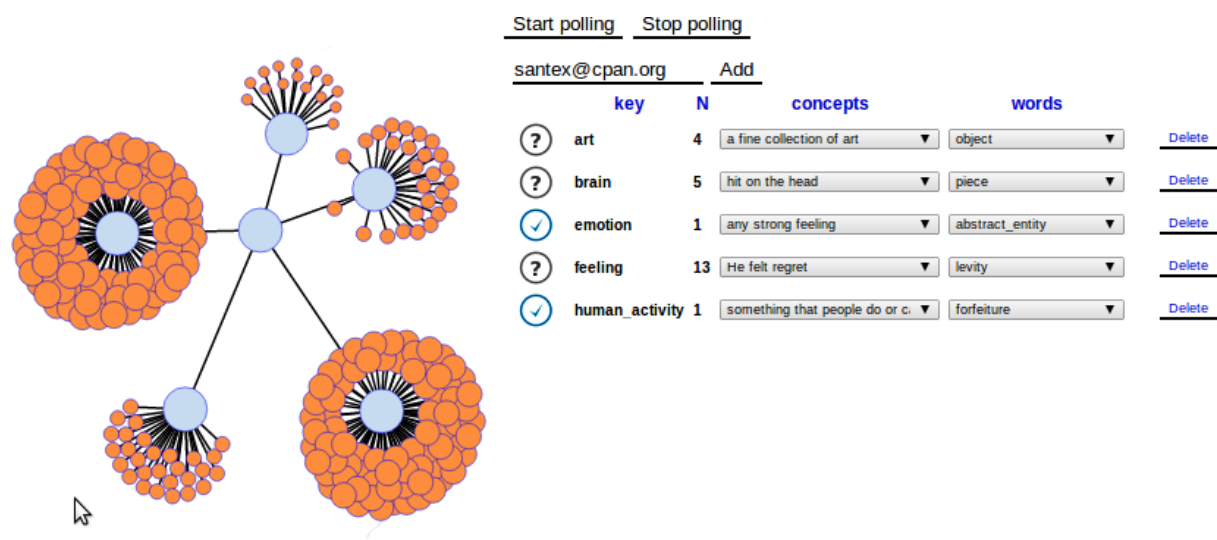
0.1 combining to a complex entity

Figure 2: making micro-structures

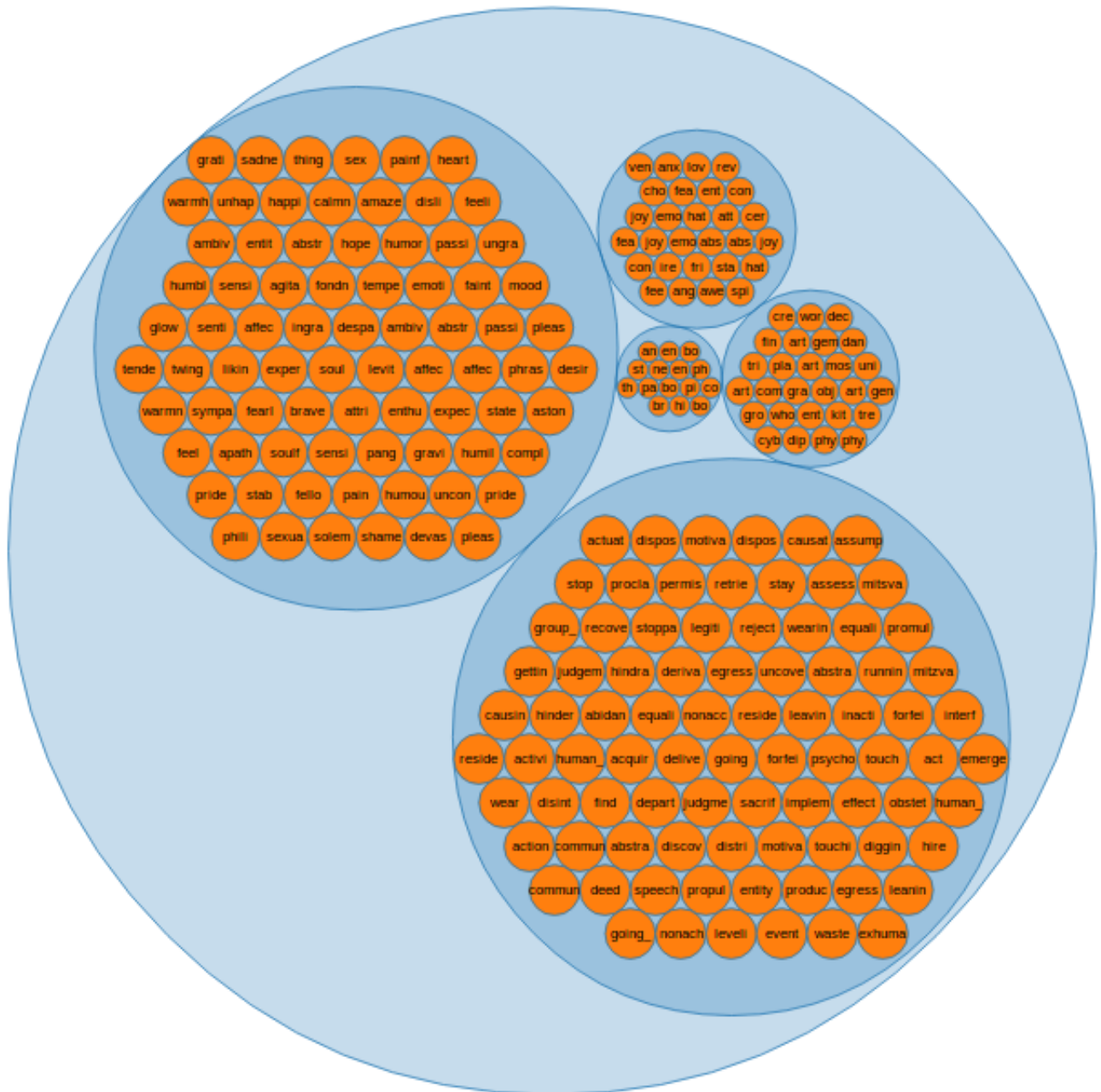| concept art | 4 sub-concepts | 27 key-words |
concept brain	5 sub-concepts	16 key-words
concept emotion	1 sub-concept	28 key-words
concept feeling	13 sub-concepts	76 key-words
concept human-activity	1 sub-concepts	83 key-words

The core node is my user-name

Figure 3: pack of concepts

0.2   micro-structure properties

- a micro-structure lives as a perl module ($micro new existence)

- most human concepts available

- combine modular

- access via terminal

- micro-structure have access to the data-plug-in's (wiki, google, torrent)

- the micro-structure is used as permanent query to scan for data.

0.3   active-memory plug-ins

- plug-ins are like feeds to just compatible to micro-structure's

- currently in use wiki plug-in (google planed)

1   Fitness

Variables →

- C-total Word-net concept sum

- C-established used concept sum

- generation

- spawning links sum **in individual**

- tag-number sum **in individual**

- tag-ratios across total data population in micro-structure

- tag-density across total data population in micro-structure

- media items ratio **(links/amount media items)** (ogg, image, pdf)

- special items ratio **(links/amount special items)** (category, list)

- amount non linking/spawning individuals/

2 continuum of concepts within a micro-structure

- → **object**
- natural object—physical object—celestial body—heavenly body
- planet
- outer planet
- jovian planet
- superior planet
- major planet
- gas giant
- jupiter
- Iapetus
- moon
- satellite
- heavenly body—celestial body—physical object—natural object
- → **object**;

3 dealing with sub concepts of a higher order

my personal implementation please note there is a chance that things are broken at the time you look
try bit later or send a mail

http://algoservice.com:5984/wikilist/_design/base/micro.html
bzw:
http://algoservice.com:5984/wikilist/_design/base/micro-wiki.html

this is a representation of ca 200.000 result-nodes across a large number of (category's / micro-str

the page still changes very frequently but normally it will provide a on the fly semantic within the
by next-neighbor approximation as demonstrated in the right panel on the page

wait until web socket is connected (http://algoservice.com:5984/wikilist/_design/base/micro.html) th

next neighbor's of "biology" and the density of crossovers

(biology) = 4382 Article/end-nodes in population
(biology, anatomy) = 161 Article/end-nodes in population

```
next neighbour's
biology: 4382
anatomy: 161
genetics: 155
zoology: 123
ecology: 86
botany: 63
chemistry: 63
medicine: 48
medical: 47
unit: 42
genus: 41
wine: 40
animal: 39
mollusc: 39
evolution: 37
mycology: 37
journal: 36
epidemiology: 35
```

this way we are able to create a ontology over huge amount of data,
as we interpolate over knowledge.
its similar to a tetra-eder network.
or a Voronoi_diagram.

http://quantup.com/lib/3d/examples/voroboids/voroboids.html
http://upload.wikimedia.org/wikipedia/commons/8/89/2Ddim-L2norm-10site.png

the group,
of most dense nodes (swanning & categories),
build the point of convergence, like in the Voronoi_diagram.

Please note that these 200.000 nodes come from my space micros-structure ,
its de-central

normally,
you would have your own structure and end-nodes,
across what ever concepts you fancy.


```
$. sudo micro new hacker
```

returns
organism

```
                .--’"""""--.>_
              .-’  o\\b.\o._o.‘-.
            .-’.- )  \d888888888888b.
          /.’    b  Y8888888888888888b.
        .-’. 88888888888888888888888888b
       / o888 Y Y88888888888888888888888b
      / d888P/ /| Y"Y8888888888888888888b
    J d8888/| Y .o._. "Y8888888888888Y" \
    |d Y888b|obd88888bo. """Y88888Y’ .od8
   Fdd 888888888888888888bo._’|| d88888|
   Fd d 88\ Y8888Y "Y888888888b, d888888P
   d-b 8888b Y88P’     """""Y888b8888P"|
   J  8\88888888P    ‘m.          """"" |
   || ‘8888888P’       "Ymm._          _J
   |\\  Y8888P  ’       .mmm.YM)      .mMF"’
   | \\  Y888J       ’ < (@)>.- ‘    /MFm. |
   J  \  ‘YY            ""’    ::  MM @)>F
   L  /)  88                 :  |  ""\|
   | ( (   Yb .             ’  .  |     L
   \   bo  8b    .            .  J    |        The word hacker
    \      "’ .     .    .    . L   F          has 4 concept’s
     o._.:.      .         .  \mm,__J/  /      we need to find out the which one
     Y8::’|.               /    ‘Y8P  J        to use for our new,
     ‘|’  J:   . .      ’   .  .  | F          micro-structure,
      |   L           ’  .    _:   |
      |   ‘:         . .:oood8bdb. |
      F     ‘:.            "-._   ‘" F
```

(1): someone who plays golf poorly
(2): a programmer who breaks into computer systems
    in order to steal or change or destroy information as a form of cyber-terrorism

(3): a programmer for whom computing is its own reward;
 may enjoy the challenge of breaking into other computers
 but does no harm true hackers subscribe to a code of ethics
 and look down upon crackers

(4): one who works hard at boring tasks

  Type: the number you choose 1..4
 #my choice of sub-concept
$. 3
returns

hacker

```
programmer
computer_programmer
coder
software_engineer
engineer
applied_scientist
technologist
person
individual
someone
somebody
mortal
soul
organism
being
living_thing
animate_thing
whole
unit
object
physical_object
physical_entity
entity
causal_agent
cause
causal_agency
physical_entity
entity
computer_user
person
individual
someone
somebody
mortal
soul
organism
being
living_thing
animate_thing
whole
unit
object
physical_object
physical_entity
entity
causal_agent
cause
causal_agency
```

```
physical_entity
entity
hacker
programmer
computer_programmer
coder
software_engineer
```
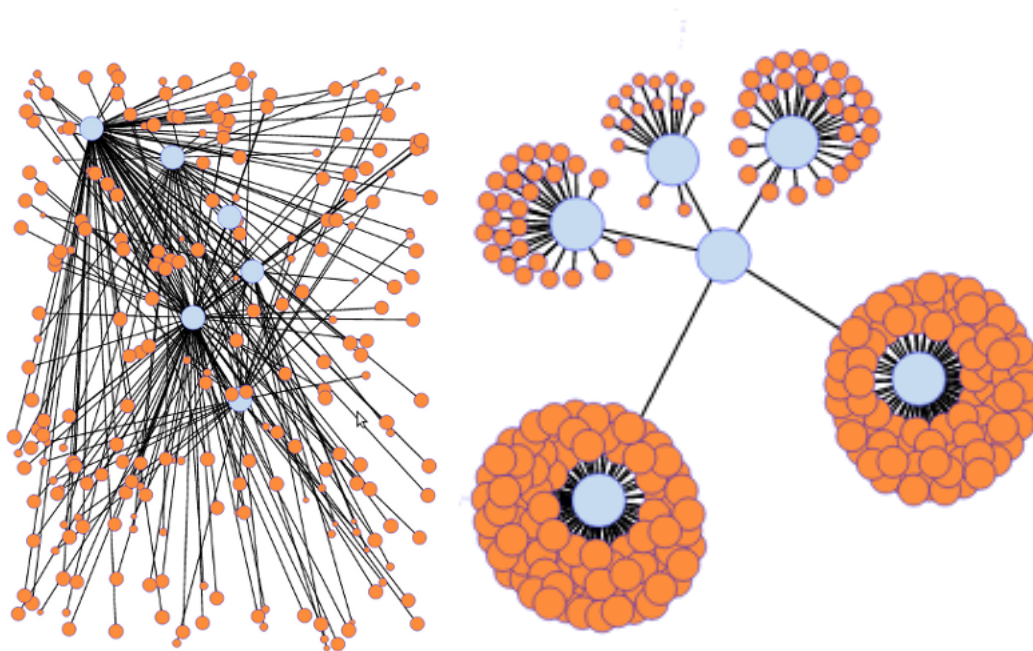
4   Project code structure

- → **perl module**

- → **memcache**

- → **couchdb**

- → **wordnet**

5   experimental Implementation

- → **ui: http://www.quantup.com**

- → **data-base: http://algoservice.com:5984/wikilist/**

- → **git: https://github.com/santex/active-memory**

6   Network

Data in disorganised data network   The same network as micro-structure

Data in disorganised data network   — The same network as micro-structure

7   A sample

```
~$ micro hacker
computer_user

~$ micro hacker
programmer

now use > $ micro hacker 20
animate_thing
programmer
object
coder
computer_programmer
physical_object
living_thing
entity
software_engineer
physical_entity
engineer
cause
```

```
individual
applied_scientist
being
hacker
somebody
technologist
causal_agent
whole
```

8   A sample with data

```
$ micro new constallation;
$ micro constallation 103;
```

```
 andromeda
 antlia
 apus
 aquarius
 aquila
 ara
 argo
 aries
 auriga
 bootes
 caelum
 cancer
 canis_major
 canis_minor
 capricorn
 capricornus
 carina
 cassiopeia
 centaur
 centaurus
 cepheus
 cetus
 chamaeleon
 chameleon
```

```
charioteer
circinus
columba
coma_berenices
constellation
corona_borealis
corvus
crane
crater
crow
crux
crux_australis
cygnus
delphinus
dorado
dove
draco
dragon
entity
eridanus
fornax
gemini
great_bear
great_dog
grus
hercules
hunter
hydra
hydrus
indus
leo
lepus
libra
little_bear
little_dog
lupus
lyra
mensa
microscopium
musca
natural_object
norma
object
octans
ophiuchus
orion
pavo
pegasus
```

```
perseus
phoenix
physical_entity
physical_object
pictor
pisces
puppis
pyxis
reticulum
sagitta
sagittarius
scorpio
scorpius
sculptor
serpens
snake
southern_cross
southern_triangle
taurus
telescopium
triangle
triangulum
triangulum_australe
tucana
unit
ursa_major
ursa_minor
vela
virgo
volans
vulpecula
```

get data this shell script only to balance load regular command
(micro-wiki virgo) ....

```
#!/bin/bash
IFS_BAK=$IFS;
IFS=$'\n';
array=( $(micro constallation 105) );
n=0;
for item in ${array[@]}
do
var=$(ps aux | grep -c perl);
if  [ 80 -lt $var ];
then
```
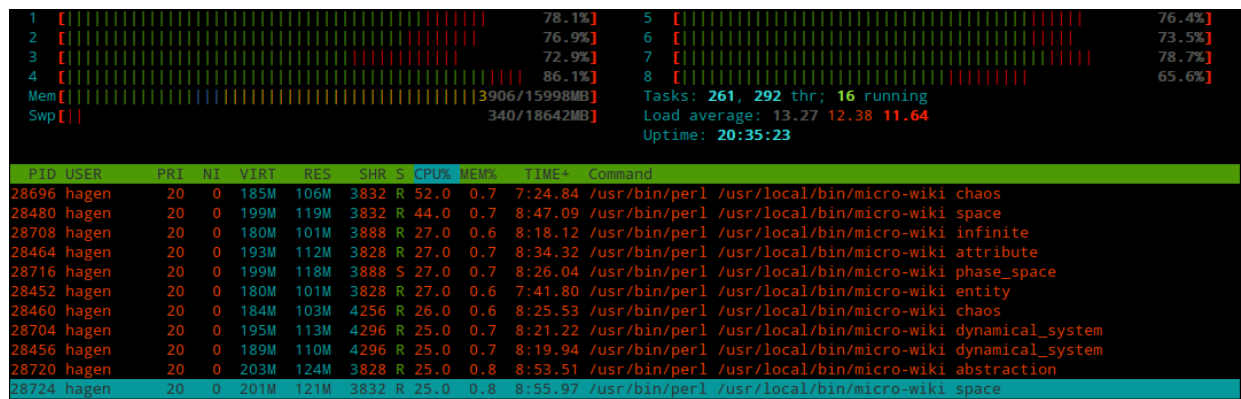
```
  echo $n;
  sleep 10;
else
  micro-wiki $item &
fi
  let n+=1
done;
echo $n;
IFS=$IFS_BAK;
```

downloading

....

sample out images (actually the image results are times 5)

....