Exploratory Programming for Formal Concept Analysis

An Introduction to conexp-clj

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May 24, 2013

http://www.math.tu-dresden.de/~borch/conexp-clj/icfca2013-tutorial.html

Main Question

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- `conexp-clj`!

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- Data-intense computations
- GUI enthusiasts

Main Features of `conexp-clj` (Overview)

- basic operations on formal contexts
- relational algebra with formal contexts
- transparent IO for formal and many-valued contexts
- scaling for many-valued contexts
- implicational theory and basic attribute exploration
- computing Luxenburger-bases and iceberg concept sets
- lattice layouts and lattice IO (some...)
- a bit of fuzzy-FCA
- interface for Java
- interface for sage

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- compiled

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- Run `./bin/conexp-clj` for a simple (yet sufficient!) command-line interface

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Running

- Run `./bin/conexp-clj` for a simple (yet sufficient!) command-line interface
- Run `./bin/conexp-clj --gui` for a "convenient" (but mostly broken) graphical user interface

Code

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user=>
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user=> 1
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user=> (+ 1 2)
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live!

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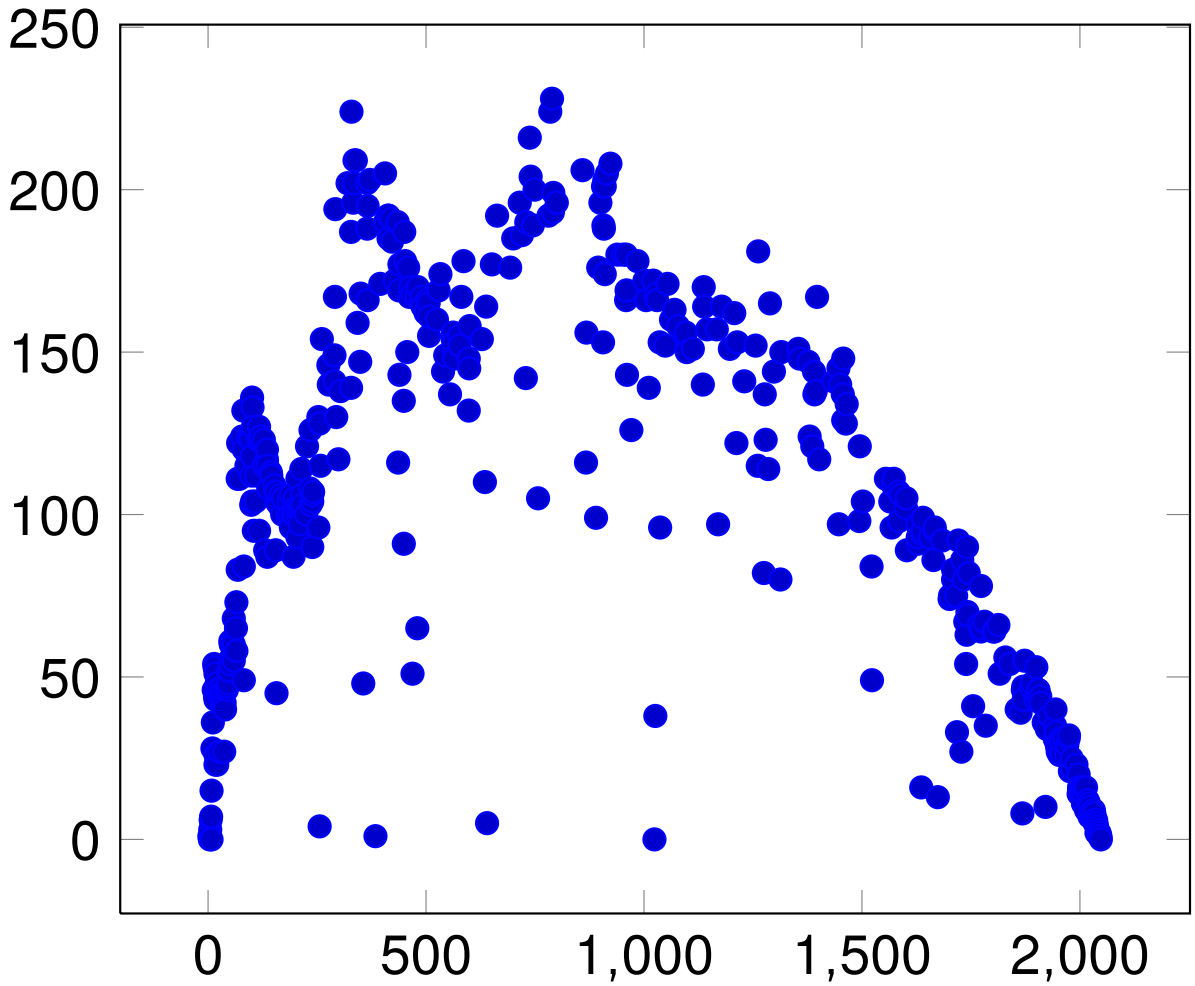

Code

```
(def points
     (map (fn [_]
            (let [ctx (reduce-context (random-context (rand-int 2048)
                                                      11
                                                      (rand)))]
              (list (count (intents ctx))
                    (count (pseudo-intents ctx)))))
          (range 1 1000)))
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conexp.fca.implications/proper-premises-by-hypertrans
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- C backend for better performance
- Retain flexibility, but increase speed

Exercises!

Thank You!