

Lab 5

Ex .1 - Cholesky Decomposition

The code is in `l5.py` and we use `pyspark` to run the implementation. And the result is shown as follows:

```
(base) william@astolat:~/Desktop/VE472/labs/l5$ spark-submit l5.py
21/07/06 21:01:09 WARN Utils: Your hostname, astolat resolves to a loopback address: 127.0.1.1; using 192.168.1.111 instead (on interface wlp2s0)
21/07/06 21:01:09 WARN Utils: Set SPARK_LOCAL_IP if you need to bind to another address
21/07/06 21:01:09 WARN NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
[[ 5.  0.]
 [-10.  1.]]
[[ 5.  0.  0.]
 [ 3.  3.  0.]
 [-1.  1.  3.]]
[[ 2.64575131  0.  0.  0.  0.  0.  ]
 [-0.75592895  2.72554058  0.  0.  0.  0.  ]
 [-1.13389342 -0.31448545  1.61721508  0.  0.  0.  ]
 [ 0.  0. -0.61834694  2.14887111  0.  0.  ]
 [-0.37796447 -0.47172818 -0.35673862 -0.10265308  1.86997735  0.  ]
 [ 0.  0.  0. -0.93072125 -0.05109228  2.26520364]]
log4j:WARN No appenders could be found for logger (org.apache.spark.util.ShutdownHookManager).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
```

After checking the result with matlab `chol` function, we can say that we've successfully run Cholesky Decomposition on spark.