



“Big (Hyper)Graph” Clustering Framework

Boonyarit Changaival
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Hello!

I am Boonyarit (Bird)

- ❑ Bachelor & Master

Computer Engineering

King Mongkut's University of Technology Thonburi
(KMUTT)

- ❑ Currently a PhD Student at UNILU

- ❑ Interests

Multicore Computing, Malware Analysis, Graph Theory,
Metaheuristic Optimization





Advisors

University of Luxembourg
Prof. Pascal Bouvry
Dr. Grégoire Danoy



KMUTT (SIT), Thailand
Assoc.Prof.Dr. Kittichai Lavangnananda





Outline

- ◇ What is Big Graph?
- ◇ Objective
- ◇ Framework
- ◇ Work in progress
- ◇ Conclusion





BIG Graph

Basically, a graph in a size of
Millions nodes, Full of
information!




Currents

Known Graphs only
Memory Requirement
Graph Clustering: NP-Hard
Local Information is not fully used

Objectives

Tackle known and unknown graphs
Cluster a big graph Efficiently
Utilize local information
New Metric for cluster quality






Agent Based (Hyper)Graph Clustering Algorithm

Explore the graph!


Improve
Metric!

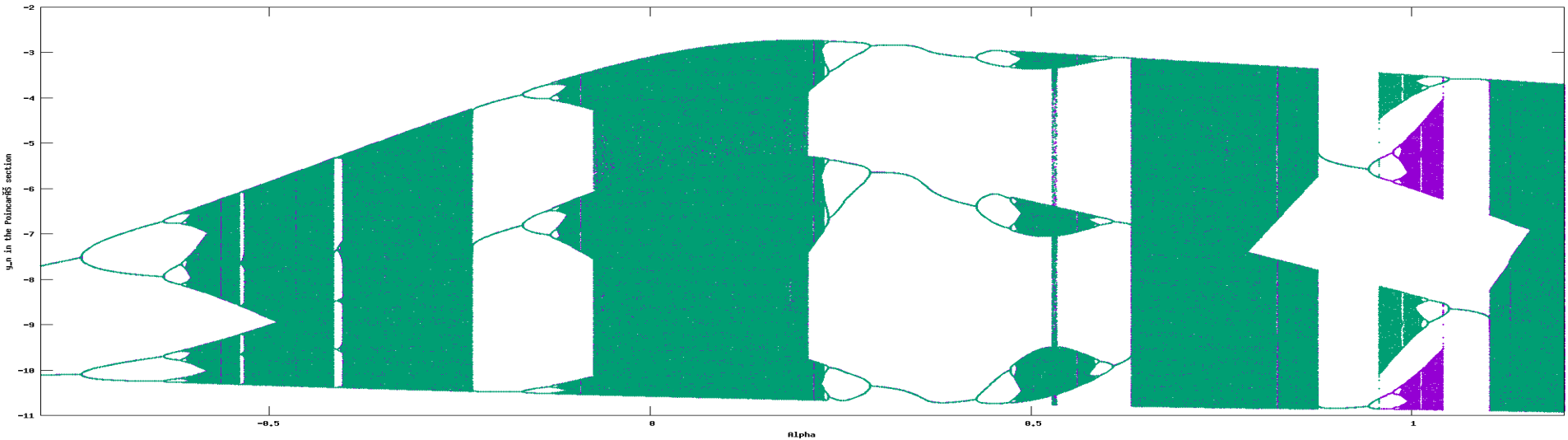
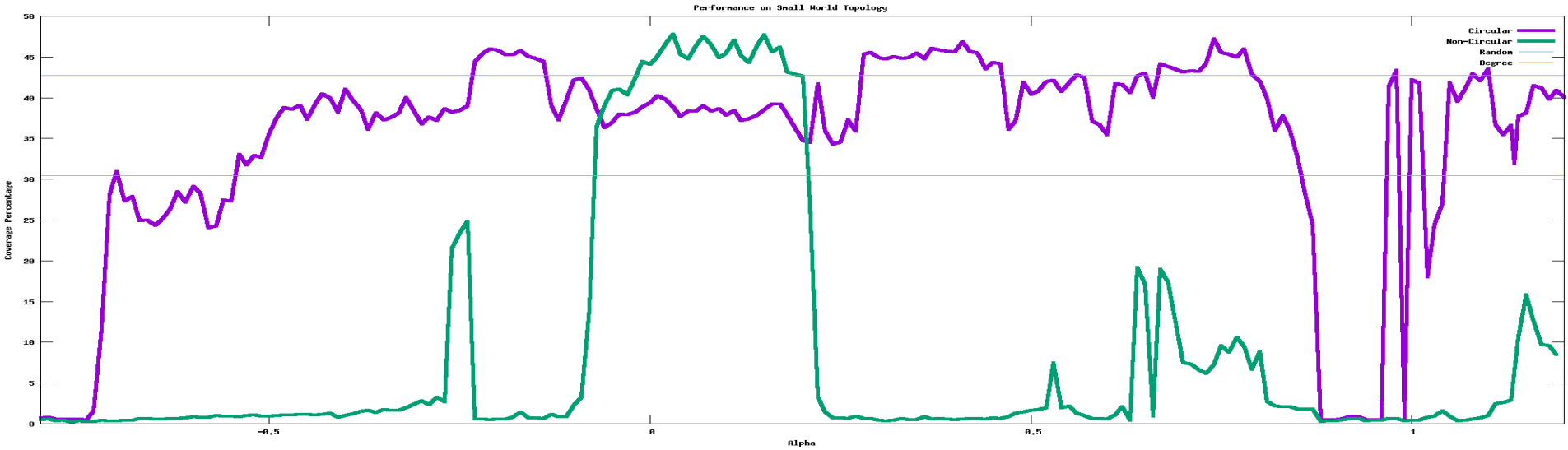
Cluster using
Metaheuristic





Work in Progress

- ❑ Studying on Chaos Theory and Graph Traversal integration
 - ❑ Aiming to use as less memory as possible
 - ❑ Shooting for a high coverage in unknown graph
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Let's review some concepts

**1. BIG
(Hyper)Graph**

**2. Unknown
graph not tackled**

**3. Memory Issue
for graph
traversal and
metaHeuristic
algorithm**

**4. Local
Information not
fully utilized**

**5. Agent Based
Metaheuristic
(Hyper)Graph
Clustering Algorithm**



Thanks!

You can find me at:

◆ E-003, Campus KirchBerg

◆ boonyarit.changaival@uni.lu

