Thesis Title

PhD Thesis (Final Draft)

Student Name

Tuesday 22$^{\text{nd}}$ December, 2020 20:21

Abstract

In short this is the content of my work...

Publications

Main author

1.

Co-author

1.

Todo list

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TODO: Review by Mr Isaiah

1.0.1 Problem Formulation

What if in a graph of connected components $G[\tilde{S}]$, the maximum number of nodes in a connected components are equal? This may not necessarily imply that the cost of disconnectivity (pairwise connectivity as a measure, say) is the same for all disconnected components. Therefore, might not solve the problem of disconnectivity in a network breakdown. For example, in the Graph above c_1, c_3, c_4 (in red in **??**) all

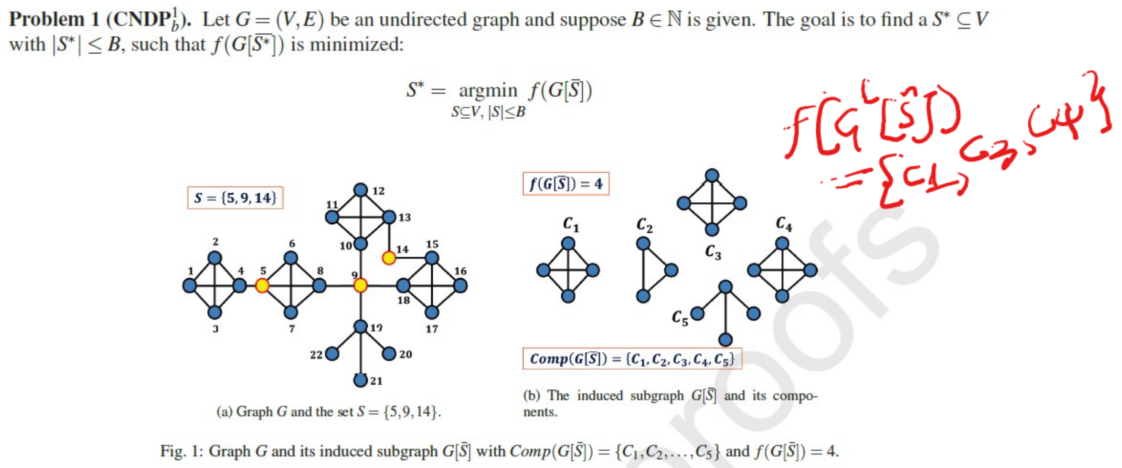

Figure 1-1: Components

have same value of maximum number of connected nodes which may not have same cost should there be weights - representing capacities or resilience index - attached to each node.

1.0.2 Possible way out

What if we formulate our objectives in such a way that:

1. It first seek the maximum number of connected nodes in the subgraph; then
2. Picks the one with the relevant figure of pairwise connectivity?

By **??**, we assume the authors default structure. By **??**, we are able to extend their work. If we succeed, the novelty will be the consideration of a scheme that considers both problems simultaneously through a sequential algorithm that counts first and evaluates next. That is, we will be combining $CNDP_a^1$ and $CNDP_b^2$; see **??** below as in **?**.

Journal Pre-proofs

Table 1: The different versions of CNDP based on the three different connectivity metrics[17].

	Type 1	Type 2
(a) Pairwise Connectivity	CNDP_a^1	CNDP_a^2
(b) Size of the Largest Connected Component	CNDP_b^1	CNDP_b^2
(c) Number of Connected Components	CNDP_c^1	CNDP_c^2

Figure 1-2: CND Problem Types

1.0.3 Challenges

Can't say for now how the simulation will look like. I mean I cannot predict the feasibility. But if we agree on this objective, the formulation is quite "theoretically or mathematically" feasible and explainable. But theory do not always guarantee feasibility in programming. Let us continue from here. oooooooooooooooooooooooooooooooooooooooooo
ssssssssss

1.0.4 test

we are doing well.