

Dissertations

Content

Introduction

- Academically
 - Dissertation is the climax of a graduate course
 - Its a product of research
 - With proven findings
 - Got through acceptable methodology
- Not easy
 - Many students find it hard
 - Have to do it the hard way

Whats in a Dissertation

- To understand a dissertation
 - Find out what are the results
 - Why find out those results
 - Whats the methodology
 - Whats the presentation
 - Why are results so
 - Can something more be done?

Our Task

- Look at few recent dissertations
 - Understand their methods
 - Motivation
 - Results
 - Presentation
 - Discussions
- Can be abit harder, they are ahead of you
- You need to propose what can be extended
 - If you were to do follow on research

Cases

- 1) Typing Pattern Biometric extension to Kerberos Version 5 Authentication Protocol – Rose Nakasi
- 2) A hybrid Algorithm to Detect Malware and Eliminate Zero day Attacks – Joseph Lwomwa
- 3) A tool to mitigate Denial of Service Attacks in LAN – Kyambade George

Case 1 – Nakasi Rose

- On a glance,
 - What must you know before making a contribution
 - Kerberos V5
 - Typing Patterns representation
 - The current level of research on both
 - The Existing gapsTHESE MUST BE CLEARLY INDICATED IN THE LITERATURE REVIEW
 - How do you address the gaps? [Methodology]
 - What methods did they use as they generated the gaps?
 - Could the gaps be a consequence of the methodology?
 - If No, stick to the methods in the literature

Case 1

- What paradigm
 - What paradigm has been used in the literature?
Safer to stick to it
- Results Presentation
 - How do u represent results to indicate if U have succeeded or failed?
 - How do you ensure the results are technique based rather than instance based
- Discussion
 - Why are results so?

Typing Pattern Biometric extension to Kerberos V5 Authentication Protocol

- Kerberos
 - Secure authentication over an insecure channel
 - Assumes once u have the secret key, you are the right person
 - Susceptible to
 - Guessing
 - Brute force attacks
 - Cookies saved passwords
 - XSS
 - Kerberos can be improved, but the weakness is on its philosophy. Reliable on cases where the weaknesses are invalid

Typing Patterns....

- Typing patterns
 - Basic and foolish – bright on deeper look
 - Eg we can all talk, how do we distinguish our voices? - speech pattern
 - We can all type, do we type the same way?
 - What determines the way of typing??
 - What can make intra variations (false +ve)
 - What can cause inter similarities (true -ves)
 - Can we extract the few that work???
 - Can we focus on a simple case?

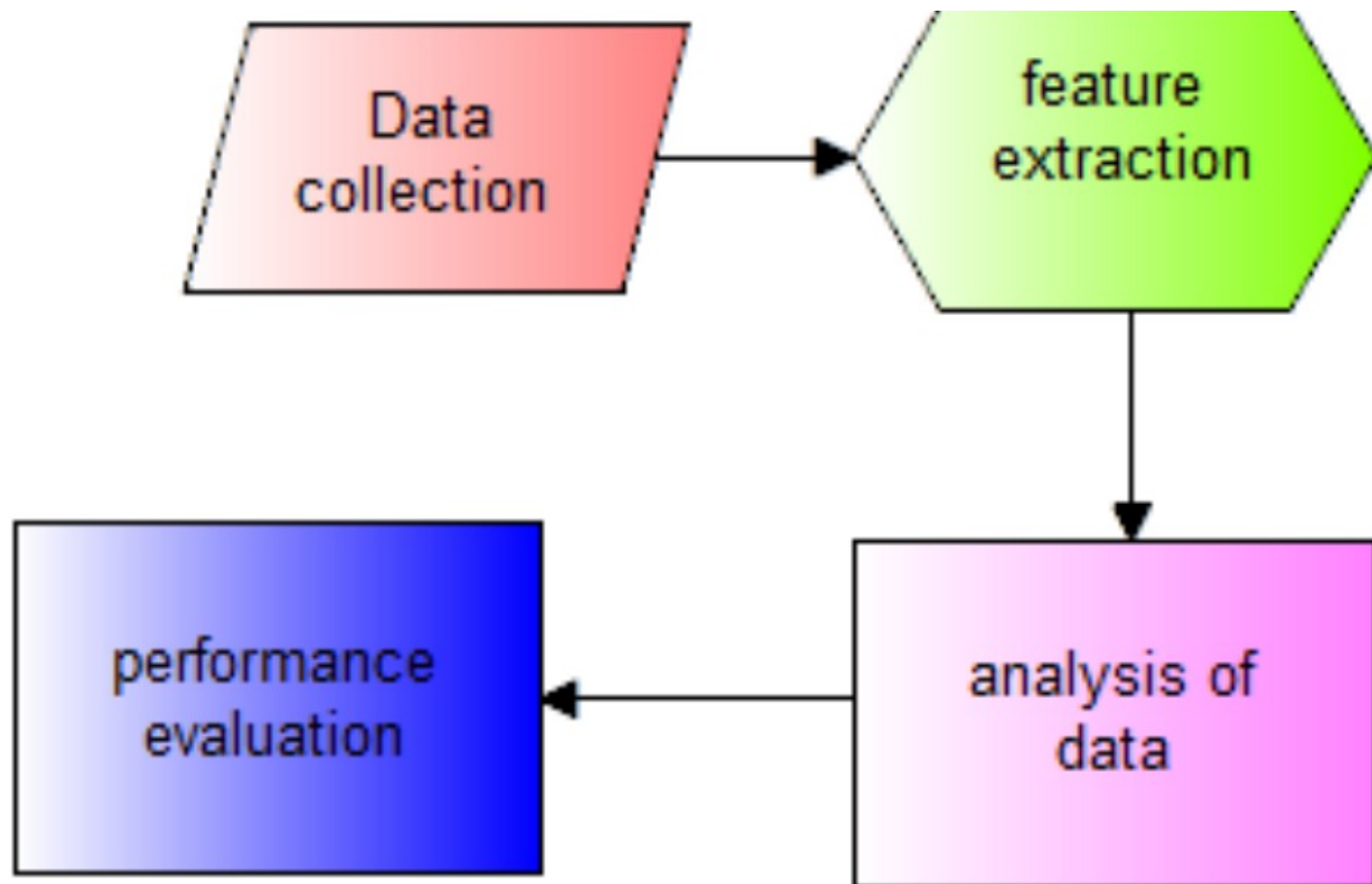
Typing Patterns

- How shall we pick the patterns
 - Respondents
 - Avoiding artificialization of collections
 - Collecting enough samples without boring respondents
- How shall we analyze the patterns?
 - Statistical
 - Regression
 - Classification

what is superior??

The Process

how do we implement each phase?



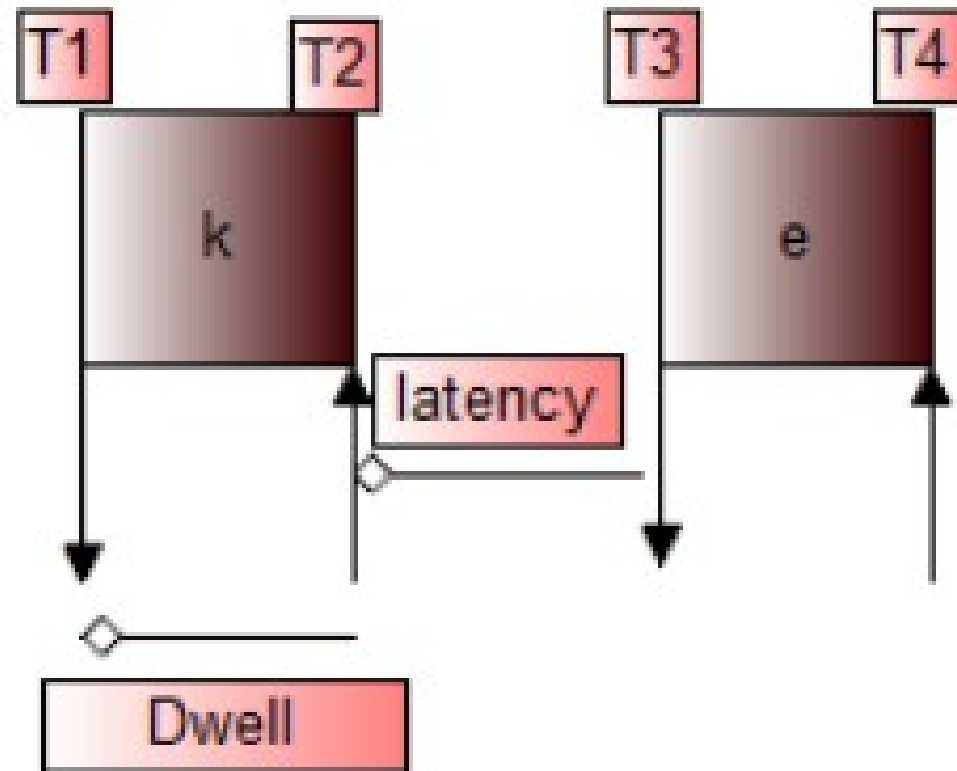
Some scoping

- Characters considered
- Keyboard used
- System used
- Background effect – eg distractions
- Classifier used (KNN this case)
- Types of users used (students this case)

Relaxing any of them lets you extend the dissertation

Unit of measure

dwelt and latency



Analysis

- Make training set
- +ve test
- + validation test
- - validation test

Possibly the testing are abit ahead

What to note

- Linking the research to the current state of science
- Looking critically on what to use
- Linking what you do to the literature
- Choosing the methods
 - Not hard

Assignment

- Read through the two cases remaining
 - Suggest 4-6 ways you can extend their research with justification. Use Latex. 2-3 people