**Portfolio U – An Algorithmic Trading Systems**

CA1 for KE5207 (Computational Intelligence 2)

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Tan Chee Wei (A0179723U, email: )

Ramasamy Muthuraman (A0179756H, email: e0269775@u.nus.edu)

Laxman Singh (A0178223E, email: )

Varoon (AXXXXXXXX, email: )

Abstract

Summary of system design & modelling

* To design and develop a real quantitative algorithmic trading system (ATS) using (Genetic Algorithms (GA) and Fuzzy Logic/Set) to trade Crude Palm Oil (FCPO) Futures on Bursa Malaysia Derivatives Exchange.
* With an initial investment fund of $1million was allocated, using new ATS to obtain highest profit by running for few years.
* Our system’s trading strategy was based on real historical market data, through simulation. Hence to calculate the actual market value (MKV) of position at end a few years are evaluated.
* The trading strategy is modelled/optimized/learnt based on known historical market data, using computational intelligence techniques such as GA and fuzzy logic methods.

Results from simulation (e.g. simulated total asset value)

* Simulated total asset value at end of year 1, 2 and 3
* Total Profit and Loss (P&L)
  + Short sell P&L
  + Commission and fees
  + Net asset value (NAV)
  + Interest rate
  + Rate of return

1. **Introduction**
2. **Materials & Methods** 
   * **System Design and Architecture**
   * **Overview**
   * **Moving Average method**
   * **GA**
   * **Fuzzy Logic**
   * **Process flow**
   * **Modelling and Simulation**
     + **Training Data set**
     + **Testing Data set**
3. **Results & Discussion**
   * **Final total asset value calculation details**
     + - NAV (Total unrealized market value + cash balance) at end of 2016 DEC 30 17:59.
   * **Short Sell P&L calculation details**
4. **Conclusions**
5. **List of abbreviations**
6. **Acknowledgements**
7. **Appendix A.**
8. **References**