Computer Science & Systems Engineering

Syllabus for Qualifying Examination for PhD Submission

Research Issues in Software Engineering, Networks and Security


References:

3. Software Architecture: Perspectives on an Emerging discipline, Shaw, M., Garlan, PHI.
6. Computer Forensics, David Cowen
7. The basics of digital forensics: the primer for getting started in digital forensics, J. Sammons
Research Issues in AI and Data Engineering

1. **Artificial Intelligence & Machine Learning:** Heuristic search techniques for state space search, Reasoning under Uncertainty and Fuzziness, Natural Language Processing, Neural Network Learning, Genetic Algorithms

2. **Data Mining:** Data Preprocessing, Dimensionality Reduction, Research trends in Association analysis, Classification, Cluster analysis, and Outlier Analysis

3. **Big data Analysis:** 4v’s of Big Data, Drivers for Big Data, Big Data Analytics Application, Big Data Architecture components, Advanced Analytics Platform, Implementation of Big Data Analytics


Reference Books:

1. Artificial Intelligence – Elaine Rich, Kevin Knight and Shivashankar B Nair, TMH publishers
2. Artificial Intelligence : Structures and Strategies for Complex problem Solving -- George F Luger, Pearson Education
3. Machine Learning, Tom Mitchell , McGraw Hill,
4. Introduction to Data Mining by Pang-Ning Tan, Michael Steinbach, Vipin Kumar.
5. Data Mining Concepts and Techniques by Jaiwei Han, Micheline Kamber, Jian Pei.
6. Big Data Analytics- Disruptive technologies for changing the game by Dr.Arvind Sathi.
7. Mining of Massive datasets by Jure Leskovec, Anand Rajaraman, Jeffrey D.Ullman