

PSYCHOLOGICAL DATA SCIENCE



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11.8.2016

Psychological Datum & Data

What is Psychological Datum ?

- Psychological datum is piece of information about psychological experience .

Why is it important ?

- Datum provides information about event.

What is Data ?

- Plural of Datum is Data.

Which is important between Datum and Data ?

- Both are important for research depending on predictive power.

Data-Information-Knowledge

- Data provide information about event.
- Interrelated data provide pattern.
- Recognition of pattern gives story.
- Several stories provide knowledge about nature.
- Knowledge provides wisdom.

WHAT IS PSYCHOLOGICAL DATA SCIENCE ?

- Psychological data science is emerging interdisciplinary field of science in Psychological research.
- It is interdisciplinary as it includes five sciences besides domain knowledge of Psychology. These sciences are:
 - Statistics & Mathematics for data cleaning, mining , pattern recognition, classification and prediction.
 - Information technology for information storing , accessing and processing.
 - Computer sciences for knowledge about creation of data warehouse based on data architecture.
 - hardware and application software.
 - Machine learning for algorithm writing.
 - Operation research for optimization and product engineering.
- So psychological data scientist should work in a team.

Why Psychological Data science ?

- All most all long-term objective and innovative oriented organizations tend to change their structure, processes and product by analysis of the massive pool of data available.
- Psychological data scientist by data mining can provide solution focused insight to organizations in solving problems.

Analysis VS Analytics

- Both use statistical tools
- In analysis, statistical tools are used for theory development (description of construct, how construct works, reliability and validity of construct, the components of construct etc.)
- In analytics, statistical tools are used for prediction, control and solution focused strategy.
- In analysis, researcher has knowledge about behaviour of construct.
- But in analytics, researcher has no knowledge about behaviour of construct.
- Analysis is hypothesis driven data analysis, but analytics is making sense of the data by data mining and pattern development.

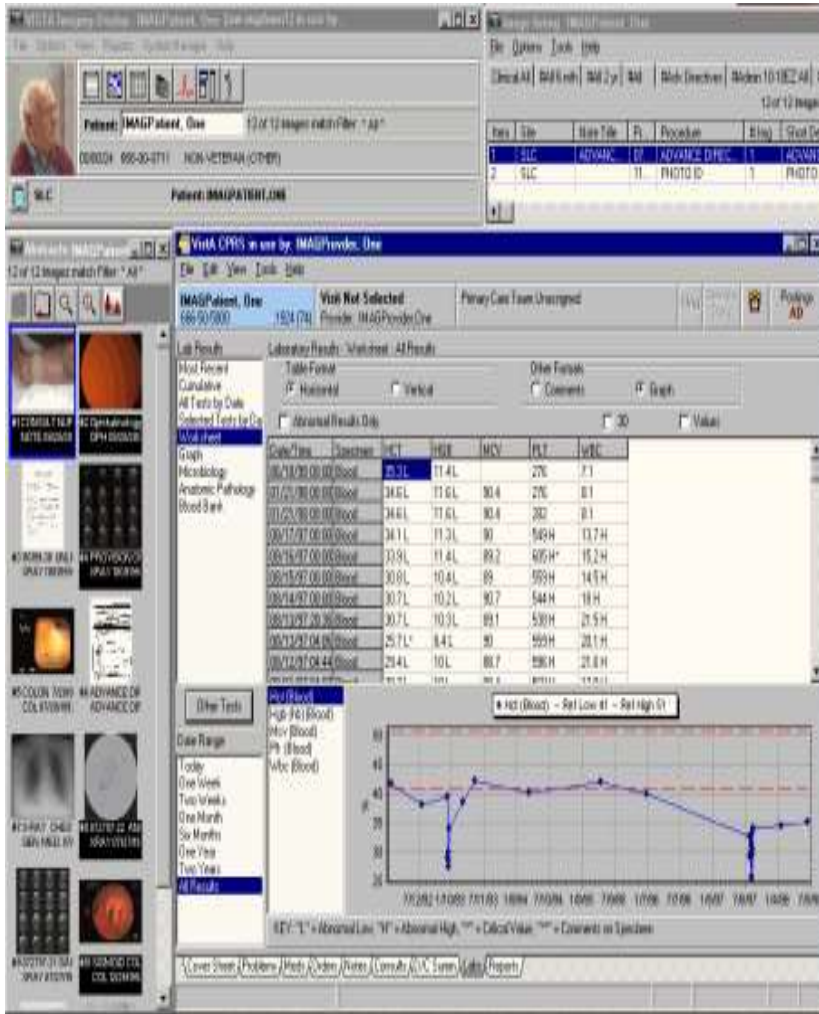
Scope of PDS in Product innovation



Reduction of buying time, interpersonal conflict between customer and sales persons, providing healthy and quality food.

Scope of PDS in Health care

- Getting more opportunity to associate multiple health parameters for diagnosis and intervention at a time.



Mental health data scientist as career

- **Mental health Nursing Informatics**
 - a registered nurse with extensive training in information technology and related software systems.
 - They collect and interpret mental health information and report findings in service mental health care.
- **Mental health Informatics Consultant**
 - a health IT specialist and/or analyst consulting independently on Mental health record adoption, data analytics and research findings; information and computer systems; and the design, development, and implementation of proprietary software and technology.

Mental health data scientist as career

- **Electronic Medical Record Keeper**
 - utilizes specific electronic medical record (EMR) applications and software programs, inputs sensitive patient information, current & past treatments, diagnoses, conditions, symptoms, medications, and more.
 - Works with hospital administrators, researchers, and insurance companies to help maintain and facilitate electronic medical record keeping.
- **Health Informatics Director**
 - with a penchant for technology and strong social and “people skills”, the mental health informatics director is the executive leader tasked with leading the integration and organization flow of data across all departments and divisions.

Competency of Psychological data scientist

- Knowledge:
 - Expertise in different domains of psychology.
 - Expertise in Quantitative sciences (statistics, mathematics, geometry), computer sciences, information technology , machine learning and operation research.
- Skills
 - Good skill about handling big data.
- Attitude
 - Spending more hours in data analysis, data madness .



Summary

- Psychological data science is team exercise as it is interdisciplinary science. Besides knowledge about psychology , expertise in five sciences are important.
- Psychological data scientist has good scope for career in managing mental health care institutes.
- Data scientist selection should follow specific competency.
- Data scientist follows five steps:
 - Data warehouse creation or identification
 - Data retrieving
 - Data cleaning
 - Data mining
 - Data visualization
 - Pattern recognition
 - Discovery of knowledge
 - Wisdom development and decision making.