Using Collective Knowledge (starts with Data-Entry)

Focusing on the Inputs for the Data Sciences

Software for Analytics, Diagnostics & Search
(Examples: Automotive & Healthcare datasets, among many others)

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Data → Information → Knowledge

courtesy Prof. Pramod Khargonekar, currently heads NSF Engineering Directorate, previously Dep. Director for Technology at ARPA-e, detailed from UFL
Ubiquiti Analytics: Raw Data to Actionable Info
Big Data: It’s Not Just the Analytics

Prof. H.V. Jagadish... UMich, Ann Arbor

More Involved ETL
Under-served, yet Crucial: Data-entry

Entered: “7 DD40 BASC 54566 CK OUT AC INOP PREFORM PID CK CK PCM PID ACC CK OK OPERATING ON AND OFF PRE FORM POWER AND GRONED CK AT COMPRESOR FONED NO GRONED PREFORM PINPONT DIAG AND TRACE GRONED FONED BADCO NECTION AT S778 REPAIR AND RETEST OK CK AC OPERATION”

Automated Coding / Indexing:
- Primary Group: Electrical
- Subgroup: Climate Control
- Part: Connector 1008?
- Problem: Bad Connection
- Repair: Reconnect
- Location: Engin. Compartment
Ubiquiti Strategic (now Tactical) Market Sizes:

**Automotive:** Essentially unshared
1. Warranty Booking & Admin: >$0.75B
2. Universal CarsFix auto-coding: >$1B
3. Service & Maintenance Marketing: >$5B
4. Online Analytical Repair Diagnosis: >$10B

**Healthcare:** At least ~10x of Automotive
1. Computer-assisted Coding
2. Health & Patient Diagnostics

**Other Data-driven Techs:** Very large…
1. Text & Self-serve Add-on
2. Data-driven Non-parametric techniques
Ubiquiti Diagnostics

- Repairs & Maintenance data form the *Knowledge Base*
  Use all –
  Technicians’ experiences, Geographic regions, Time points

- For Each New Repair Instance use existing knowledge
  - Essentially use of *Machine Learning*
  - Report *differential diagnoses, differentiators, fixes* etc.

- Simple interface (eg, Google) – anytime & anywhere
Ubiquiti Rapid Diagnostics ... screenshot
Easily Add On Ubiquiti to Existing Infrastructure/Software

Ubiquiti Nav-frame

Existing Visualization / Infrastructure / Analytics / Training

Diverse Data Sources

Select & Export

Ubiquiti to Existing Infrastructure/Software
Example: Ubiquiti Add-on for MS Excel
A Flowchart for Ubiquiti Technologies

- All data – structured, unstructured & numeric handled
- Ubiquiti can be added on modularly to existing IT, BI & Reporting infrastructure
Quick Demo(s)
Experience indicates Importance of Inputs

**ML & Stats algorithms**: Input data crucial for accuracy

**Sensor data**: Still unreliable, and also, of limited value

**Data Sciences & Technology**: A Human Endeavor
  - By the People
  - For the People

**Must take into account the Human Factors**