SOC Majoring Talk Workshop

A.I. the revolution in computing

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"the science and engineering of making intelligent machines"

John McCarthy, 1956
AI Tree (Old days)

Genetic Algorithm
Robotic
Expert System
Speech Recognition
Case base reasoning
Natural Language Processing
Artificial Neural Network

Philosophy
Logic/Mathematics
Psychology/Cognitive Science
Computation
Biology/Neuroscience
Loosing jobs? Video.

Artificial Intelligence Will Replace Your Job in 15 Years
The Role

Data → Massive data → Big data → Analysis → A.I. → Interpretation

Wrong Decision → Right Decision

Plan A / Plan B
SOC Initiative
Components in BSc.IT(Hons)

Science of Thinking and Ethics
Foundations of Finance
Programming I
Programming II
Data Structures and Algorithm Analysis
Database System & Information Retrieval
Systems Analysis and Design
Information Technology Project Management
Research Methodology In IT
Basic Networking
Computer System Organization
Operating System
Introduction to Artificial Intelligence
Human Computer Interaction
Mathematics for Information Technology
Discrete Structure
Statistics for Information Technology
Project 1 & Project 2
Practicum

Skills

Programming
Systems and Database
IT Management
Networking
AI and HCI
Quantitative courses
Application
Components in BSc.IT(Hons)

Skills

Programming
Systems and Database
IT Management
Networking
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Application

Job prospects

MIS Officer
System Analyst
IT Executive
CIO
Programmer
Trainer

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Components in BSc.IT(Hons) + AI

**Compulsory:**
- Knowledge Discovery in Database
- Neural Networks
- Logic Programming
- Machine Learning
- Knowledge Engineering & Expert Systems

**Elective:**
- Natural Language Processing
- Intelligent Agent
- Fuzzy Logic System
- Genetic Algorithm
Components in BSc.IT(Hons) + AI

Skills

- Programming
- Systems and Database
- IT Management
- Networking
- HCI
- Artificial Intelligence
- Quantitative courses
- Application

Skills:

- Problem Solving
- Planning
- Decision Making
- Complex Solution

Enhanced Capabilities

Higher Thinking Skills
Components in BSc.IT(Hons) + AI

New Skills

- Intelligent Data Analysis
- Design & Develop Intelligent System
- Intelligent Decision Support System
- Predictive & Classification System
- Human Comp/Machine Interaction

Bigger Job Scope
Where A.I can play active roles?

- Business and management
- Gaming
- Marketing
- Manufacturing
- Telecommunication
- Financial & banking
- Education
- Scientific Analysis
- Medical
- Lifestyle
- Management
- Military
- Healthcare
- Government
- Sport
- Entertainment
- Law
AI in Movie
AI in Movie
...focus attention not only on making AI more **capable**, but also on maximizing the societal benefit of AI.
New paper: “Exploratory engineering in artificial intelligence”

August 22, 2014 | Luke Muehlhauser | Papers

Luke Muehlhauser and Bill Hibbard have a new paper (PDF) in the September 2014 issue of Communications of the ACM, the world’s most-read peer-reviewed computer science publication. The title is “Exploratory Engineering in Artificial Intelligence.”

Excerpt:

We regularly see examples of new artificial intelligence (AI) capabilities... No doubt such automation will produce tremendous economic value, but will we be able to trust these advanced autonomous systems with so much capability?

Today, AI safety engineering mostly consists in a combination of formal methods and testing. Though powerful, these methods lack foresight: they can be applied only to particular extant systems. We describe a third, complementary
AI in Research

Reservoir Water Release Decision Modeling

Wan-Ishak et al. (2011), Mokhtar et al. (2016)
AI in Research

Practicum Student Placement Pattern

Knowledge Representation from the Holy Quran

We **use** AI all the time in our **daily lives**, but we often don’t realize it’s AI.
Fuzzy Logic 11.0kg

Foam detector
Adjust rinse length
Dosage evaluator
Load adjuster
Economical wash

Surf Excel Matic Approved by Moms

Being Fuzzy is being Smart!
1.8L RICE COOKER
FUZZY ELECTRONIC LOGIC
RK7035

820W
Capacity: 1.8L
Automatic keep warm
Removable inner lid - easy to clean
Our People @ SOC

Prof Dr. Ku Ruhana Ku Mahamud  
*Optimization, Swarm Intelligence, Data Science*

Assoc. Prof Dr. Faudziah Ahmad  
*Data Science, Business Intelligence*

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*Neuro-informatics, Computational Neuroscience*

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*Bio-Informatics, Computational Neuroscience*

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*Image Processing, Data Mining*

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*Data Mining, Knowledge-based Systems*

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References


