

# **Artificial Intelligence Research and Development (AIRD) Society**

## *The Journey into the Future*

### **Introduction:**

Artificial Intelligence (AI) today is a huge benefit to humanity because it boosts our efficiency and throughput, while creating new prospects for income generation, cost savings and job creation. Innovations in AI have opened new prospects for progress in critical areas such as health, finance, national security, education, energy, and the environment. In recent years, machines outperformed humans in performing certain specialized tasks, such as some aspects of image recognition. It is predicted by experts that rapid progress in the field of artificial intelligence will continue. Though it is very implausible that machines will exhibit broadly applicable intelligence comparable to or beyond that of humans in the next 20 years, yet it is to be expected that machines will reach and surpass human performance on more and more tasks.

AIRD society will enable students to rethink how we integrate information, analyze data, and use the resulting insights to improve decision making, survey the current state of AI and its existing and potential applications. Students will get more opportunities to learn, experiment and explore. Surely the future of higher education is inherently linked with developments on new technologies. Detailed description of strategic goals and mission of AIRD society is shown in **Error! Reference source not found.**

### **Vision Statement:**

To provide an innovative experience and exposure that will empower students to flourish in a technologically advanced global society.

### **Mission Statement:**

To promote innovative research and education in the field of AI. This society will support and organize the activities and collaborations between AI research groups from different fields in the University.

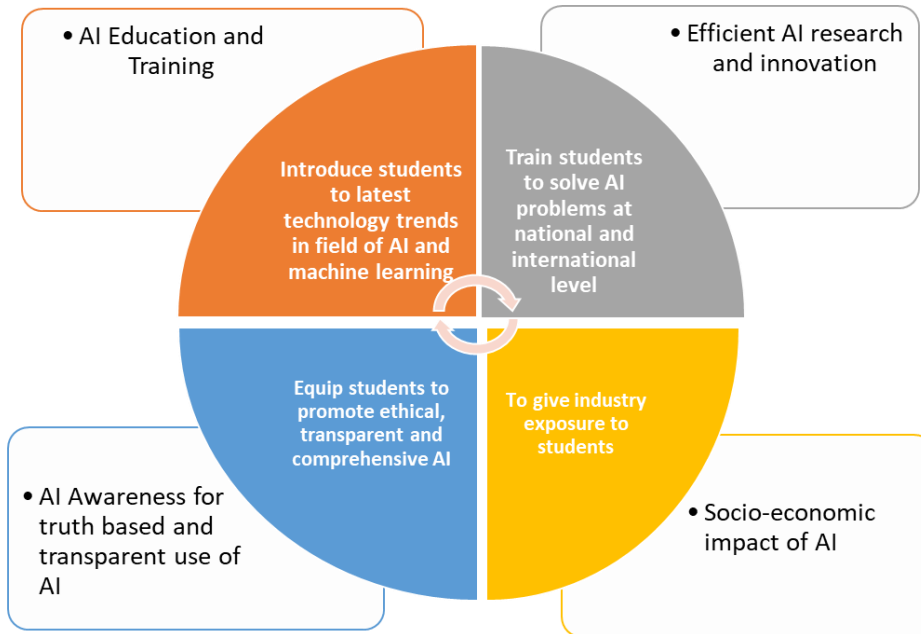


Figure 1: Strategic goals and mission of AIRD society

**AIRD Cabinet 2022-23**





## ARTIFICIAL INTELLIGENCE Research & Development Cabinet 2022-23



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## **Research & Development:**

The AIRD society will conduct research in many areas of artificial intelligence primarily focusing on the following areas:

- Data science
- Multi-agent systems
- Natural language processing
- Constraint programming
- Pattern recognition
- Computer vision
- Machine learning
- Neural network

## **Resources/Equipment:**

The AIRD society has a dedicated area on the first floor of Computer Engineering department. We will share following resources from DPI lab Telecom engineering department.

- 2 Dell power edge R940 servers
  - 4 Intel® Xeon® Gold 6138 processors 2GHz.
  - 768 GB RAM(12×64 GB) LRDIMM, 2666 MT/s, Quad Rank.
  - iDRAC9 Express
  - 2 x 960GB SSD Read Intensive 12Gbps 2.5” Hot-plug SAS Hard Drives
  - PERC H730P+ RAID Controller, 2GB NV Cache
  - Dual Hot-plug Redundant Power Supply (1+1), 1100W
  - TPM 1.2 and SR-IOV support
  - 1 x Intel XL710 Dual Port 40GbE QSFP+ Adapter
  - 1 x Broadcom 57412 Dual Port 10GbE SFP+
  - 1 x 5720 Dual Port 1GbE BASE-T
  - ReadyRails™ Sliding Rails with Cable Management
- SCV3000 3U x 16 Drive Storage Array
  - SCV Enclosure Assembly and SC Bezel
  - 2 x 4 Port 10 Gbps iSCSI PCI-E SFP+ modules
  - 8 x Dell Networking SFP+ to SFP+ twinax Cables
  - SCv30x0 Controller
  - 7 x 1.2 TB SAS 12 Gbps, 10K, 3.5” HDD
  - 7 x 4 TB NLSAS 12 Gbps, 7.2K, 3.5” HDD
  - Redundant Power Supply 1485W with 10A Jumper Cords
  - Storage Center Core Software Bundle, Base License
  - Storage Center Drive License
  - Data Progression Software License, 3 Yr ProSupport
  - Rack Rails
  - 3 Yr Warranty

- APC Easy Online UPS SRV3KI
  - 3000 VA
  - 230 V
  - 2 Yrs repair or replacement with standard backup

We will share following resources from Swarm robotics lab Computer engineering department.

- Dell power edge T440 server
  - Processor Up to two 2nd Generation Intel® Xeon® Scalable processors up to 16 cores per processor
  - 16 DDR4 DIMM slots, Supports RDIMMs/LRDIMMs, speeds up to 2666MT/s, 1TB\* max.
  - Internal controllers: PERC H330, H730P, H740P, HBA330, Software RAID (SWRAID) S140
  - Boot Optimized Storage Subsystem: HWRAID 2 x M.2 SSDs 120GB, 240 GB
  - External PERC (RAID): H840
  - External HBAs (non-RAID): 12 Gbps SAS HBA
  - Up to 8 x 3.5" SAS/SATA (HDD/SSD) max 128TB
  - Power supplies 495W, 750W, 1100W hot-p