AI-ENABLED EDUCATION

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IMPORTANT AIMS OF EDUCATION

Should enable children and young people to:

- be prepared for independent living;
- develop a healthy and positive disposition to life;
- contribute to their community and society;
- be helped to develop to their full potential;
- experience economic and environmental wellbeing;
- have their rights respected;
- enjoy learning and achieving.

21ST CENTURY - FUNDAMENTAL CHALLENGES/OPPORTUNITIES FOR EDUCATION

- Technology is transforming our lives
  - Artificial Intelligence
  - IoT and Smart Entities
  - Data Science
  - Cloud
  - …
- The skills needed in the future will be very different from those needed today.
- The Myth Of Jobs That Don't Exist Yet !!

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What is missing ?

- creativity and problem solving
- learning in collaboration and to collaborate
- deeper conceptual understanding
- connected and coherent knowledge
- authentic knowledge in context
- Less stress more focus

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Opportunities:

Automation:

- grading,
- digital asset categorization
- timetable scheduling

Goal: increase the amount of time educators spend actively engaging with students.

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Opportunities:

Integration:

AI solutions can integrate with other IT initiatives such as:

- Smart entities
- IoT-driven networks

Goal: personalized learning solutions for students.

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Opportunities:

Acclimation:

Technology is now an integral part of both educational and business environments.

- 95 percent of teens have access to a smartphone
- 45 percent are online "almost constantly."

AI in schools can help acclimate students to the pace of technological change.

Goal: AI in schools can help acclimate students to the pace of technological change.

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Opportunities:

Delineation:

- ✓Smart Content
- ✓Personalized Curriculum

Goal: AI-driven analytics in education can help spot critical trends and delineate key markers to help teachers design the most effective classroom experience and drive digital transformation.

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Opportunities:

Identification:

- Bias
- Privacy
- Human-machine partnerships

Goal: Adoption is on the rise, but concerns around bias, privacy and human-machine partnerships necessitate a methodical and measured approach.

OUR RESEARCH PROJECTS

Title:

Intelligence-Led Teaching and Learning

Aims:

The goal of this project is to advance the scientific understanding of applications of Artificial Intelligence in Education and to propose the new generation of intelligent assistants for teachers and students. The final outcome will be novel techniques in the fields of Data science, Cognitive Technology and Human-Computer Interaction and Visualization.

OUR RESEARCH PROJECTS

Title:

Linking Cognitive Technology and Sensory Systems to Support Personalized Learning

Aims:

The project will focus on understanding and analysing students' behaviour, in teaching and learning environments, and identifying features that can be extracted from various sources such as cameras (installed in classrooms), smart wearables (used by students), virtual assistants, exam platforms, and more.

AI-ENABLED PROCESSES (AIP) RESEARCH CENTRE

aip Research Centre

MACQUARIE University
SYDNEY·AUSTRALIA

Industry Streams

- AI-enabled Policing
- AI-enabled Banking
- AI-enabled Education
- AI-enabled Industry
- AI-enabled Health
- AI-enabled Agriculture
- AI-enabled Transport
- AI-enabled Marketing
- See All Streams

Research Programs

- AI-enabled Process Automation
- Cognitive Assistants for Knowledge Intensive Processes
- Data Curation for Data-Driven Processes
- Smart Entities
- IoT-enabled Business Processes
- Storytelling with Business Data
- Cognitive Analytics
- See All Programs

Recent Projects

Total Funding Since 2019: $2,617,293.65

- "AI-enabled Banking"; Linkage: Tata Consultancy Services (TCS) and Macquarie University, 2019-2023
- "Intelligence-led Teaching and Learning"; Linkage: ITIC Training and Resourcing and Macquarie University, 2019-2023
- See All Grants

People


Amin Beheshti (**Founder and Director**)


Jian Yang (**Deputy Director**)


Boualem Benatallah (**Data Curation and Cognitive Assistants - Program Leader**)


Michael Sheng (**IoT-enabled Processes - Program Leader**)


Aditya Ghose (**Process Automation - Program Leader**)


Mohsen Asadnia (**Smart Entities - Program Leader**)


Hamid Alinejad-Rokny (**Health Care Analytics - Program Leader**)


Frank Schiliro (**AI-enabled Policing - Stream Leader**)


Srini Goluguri (**AI-enabled Banking - Stream Leader**)


Stephen Elbourn (**AI-enabled Education - Stream Leader**)


Richard George (**AI-enabled Industry - Stream Leader**)

https://data-science-group.github.io/

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HACKATHON CHALLENGES

CHALLENGES

AI-enabled Education

Education across the world has undergone a critical transformation in the last decades. In the last few years, with the advancement in the technology, education has adopted the use of new technological tools, and today, the advancement in Artificial Intelligence (AI) and Data Science has the potential to deal with challenges in teaching and learning processes. For example, students learn differently, at different rates and with differing levels of learning ability and aptitude. Students has different analytical thought, various creative and communicative abilities, skill sets that differ from one region of the world to another. And some students may deal with physical and mental disabilities.

The challenges in this hackathon will focus on novel applications of AI in education from machine learning and data analytics to process automation and cognitive assistants. To facilitate personalize learning for each individual student and to augment teching with personal conversational education assistants.

JUDGING CRITERIA

Criterion		Score (1-10)	Weight	Subtotal
Innovation (idea)	Novelty and creativity		2	
	Good solution		2	
	Key parameters		1	
UI/UX	Technical/UI/UX innovation		2	
	Creativity		2	
	Execution (demo)		1	
Business Value	Business model		1	
	Market need		1	
	Feasibility		1	
	Pitch		2	
			SCORE	/150

THANK YOU

https://data-science-group.github.io/