Research Conference Assignment

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Assignment - Research Conference - Main Session Summary

Keynote Speaker Summaries

Speaker 1 - Prof.Mahesha Kapurubandara

Title/Position - Pro Vice-Chancellor SLIIT International

Presentation Topic - AI and Technology for Global Challenges

Key Points

- AI is a useful problem-solver that tackles real-world issues from healthcare, education, and agriculture to climate change.
- The world faces unprecedented challenges like resource scarcity, inequality, waste accumulation, and climate change.
- The younger generation has unique opportunities due to advanced skills, global connectivity, and the ability to create impactful solutions.
- Local implementations of technological solutions are taking place in Sri Lanka and throughout South and Southeast Asia.

Research Findings/Data Presented

- According to a 2023 survey, 60% of students want to work in AI and sustainability
- AI increased Sri Lankan agricultural output by 15% in 2024;
- Case study: Students developed an AI model that used soil moisture and meteorological data to forecast the best periods for irrigation.
- As a result, farmers reported an increase in crop yield and used 20% less water.

Conclusions/Implications

- Students who had never seen a paddy field developed technology that gave farming communities true dignity and change
- AI is not just for tech laboratories; it's a tool for inclusiveness, sustainability, and meaningful effect
- The future is youth-led, not just tech-driven.
- Local talent and ideas are driving actual projects with real impact.

Speaker 2 - Mr.Kalana Muthumuni

Title/Position - CEO and Co-Founder of Hyperglade

Presentation Topic - The Intersection of Capitalism and Sustainable Future with AI

Key Points

- AI can help close the gap between profit-driven capitalism and sustainable development goals.
- AI-driven optimization lowers costs and increases revenue in sustainable practices.
- Businesses can use AI to achieve greater profitability while upholding environmental and social responsibility.
- Combining artificial intelligence with sustainability guidelines is essential to capitalism's future.

Research Findings/Data Presented

- Due to poor financial management, Bee Works went bankrupt despite once being listed as a billion-dollar firm.
- 15% of Delma's profits are donated to the community.

Conclusions/Implications

- By strategically using AI, traditional capitalism can transform into sustainable capitalism
- When AI is used effectively, profit maximization and environmental preservation do not have to conflict

- AI-driven sustainable practices will provide early adopters a competitive edge.
- There is growing support for the commercial case for sustainable AI.

Speaker 3 - Dr.Edward Braund

Title/Position - Head of School of Computer Science, University of Bedfordshire

Presentation Topic - Exploring Unconventional Computing: Experiments in Biological Computing

Key Points

- Computing techniques that deviate from traditional paradigms and concentrate on novel languages and architectures are referred to as unconventional computing.
- Biological systems (Physarum machines), chemical systems (Belousov-Zhabotinsky computers), and physical systems (memristors) are examples of current prototypes.
- The inherent intelligence, self-repair and self-assembly capabilities, and sustainability benefits of biological systems
- The slime mold, Physarum Polycephalum, exhibits special computing abilities and is capable of resolving challenging issues.

Research Findings/Data Presented

- The slime mold Physarum Polycephalum has uses in non-traditional computing.
- Memristors are crucial parts linked to magnetic flux and charge, necessary for non-traditional computer applications
- biological systems with sensors and actuators improve processing efficiency over conventional systems.
- Pitch mapping to discrete voltage levels for data encoding and decoding was accomplished successfully in early trials.

Conclusions/Implications

- Multiple sensory inputs can be integrated using multimodal sensing techniques to improve processing power.
- Physarum memristor implementation yields encouraging outcomes for real-world uses.
- Biological computing provides environmentally friendly substitutes for conventional silicon-based computers.
- The area is transitioning from abstract ideas to real-world experimental applications.

Key Takeaways and Learning Outcomes

- AI's Multifaceted Impact: Technology can push the limits of computing itself, address social issues, and increase corporate profits all at the same time.
- Integration of Sustainability and Innovation: The conference showed that environmental responsibility and technological advancement are complementary objectives rather than conflicting priorities.
- Emerging Computing Paradigms: The shift from traditional artificial intelligence to biological computing demonstrates how quickly computational science is developing and how different techniques are required to solve complicated issues.

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