**2023 IEEE CIS Summer School on**

**Practical Approaches in Computational Intelligence**

1. **Objectives**

Computational Intelligence(CI) has become an important area of research in recent years, as it has the potential to revolutionize many industries and fields. It is a rapidly evolving field, and new techniques and applications are being developed all the time. It aims to create intelligent systems by combining various computational techniques such as neural networks, fuzzy logic, genetic algorithms, edge computing, cognitive computing and swarm intelligence. These techniques are used to solve complex problems that are difficult or impossible to solve using traditional programming methods. CI systems are designed to learn and adapt to new situations by using algorithms that can identify patterns and make predictions based on data.

The main objective of this programme is to focus on the areas of Computational Intelligence using hands on real time examples. It intends to educate the students with the domain related concepts and real world scenario to reinforce the learning in the areas of Computational Intelligence. This programme will provide a highly customized hands-on lab for Computer Science or Information Science students.

1. **Venue and Dates**

Venue: Lecture Hall Complex, M S Ramaiah Institute of Technology

Dates: 16/10/2023 – 19/10/2023 & 4/11/2023

Duration : 5 days

1. **Lectures, Courses and/or Plenary Talks**

**Speaker 1 : Dr Vijayakumar B P**

Affiliation: Professor, Dept of ISE, MSRIT, Bengaluru

Topic: Domain Specific Cognition

**Speaker 2: Mr Nishant Krishna**

Affiliation : Co-Founder and CTO of TechMachinery Labs

Topic:

1.Fast Analytics and Insights using Elastic Stack

2. Knowledge Engine

3. Taxonomy and Ontology for an efficient Computational Intelligence System

4. Clustering and Scaling

**Speaker 3: Mr Chetan S Kumar**

Affiliation : CEO and Co-Founder, Aikaan Labs

Topic:

1. Managing digital out-of-home advertising with IoT, edge and 5G
2. Moving edge computing applications from pilot to production

**Speaker 4: Dr Sumana M**

Affiliation: Associate Professor, Dept of ISE, MSRIT, Bengaluru

Topic: Reinforcement Learning from Human Feedback

**Speaker 5: Dr Megha P Arakeri**

Affiliation: Associate Professor, Dept of ISE, MSRIT, Bengaluru

Topic: Computer Vision Recognition

**Speaker 6: Ajinkya Lohakare**

Affiliation: CTO, Ditto Security

Topic: Developing Ethical Hacking tools with python

1. **Tentative Program**

The proposed program includes **10** lecture session(s), **4** poster session(s) and **8** demo session(s).

* **10** Plenary Sessions (**1.5** hours each)
* **4** Poster Sessions (**1.5** hours each)
* **8** Demo Sessions (**1** hour each)

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| Time / Date | Day 1  16/10/2023 | Day 2  17/10/2023 | Day 3  18/10/2023 | Day 4  19/10/2023 | Day 5  4/11/2023 |
| 9:00 – 10:30 | Registration and Inauguration | Mr Nishant Krishna | Dr Sumana M | Ajinkya Lohakare and Team | Poster Sessions by Students |
| Taxonomy and Ontology for an efficient Computational Intelligence System | Reinforcement Learning from Human Feedback | Cyber security & Ethical Hacking |
| 10:30 - 11:00 | **Tea Break** | | | |
| 11:00 – 12:30 | Speaker: Dr Vijayakumar B P | Mr Nishant Krishna | Dr Megha P Arakeri | Ajinkya Lohakare and Team |
| Topic: Domain Specific Cognition | Creating a simple Taxonomy and Ontology in Python | Computer Vision Recognition | Developing Ethical Hacking tools with python |
| 12:30 – 13:45 | **Lunch** | | | |
| 13:45 - 15:00 | Mr Nishant Krishna | Mr Chetan S Kumar | Mr Nishant Krishna | Ajinkya Lohakare and Team |
| Topic : Fast Analytics and Insights using Elastic Stack. | Managing digital out-of-home advertising with IoT, edge and 5G | Clustering and scaling | Penetration Testing and Ethical Hacking |
| 15:00 – 15:30 | **Tea Break** | | | |
| 15:30 – 17:00 | Mr Nishant Krishna | Mr Chetan S Kumar | Mr Nishant Krishna | Ajinkya Lohakare and Team |
| Topic: Knowledge Engine: -Creating a Knowledge Engine using Durable Rules | Moving edge computing applications from pilot to production | Clustering in the cloud using Docker and Lambda (serverless frameworks) | Web application penetration testing |

1. **Organizers**

Please state the organizers and give contact details about the main contact person, e.g., the General Chair.

**General Chair:**

**Name** : Dr Sumana M

**Affiliation:** Senior Member IEEE, Member of IEEE-CIS, LM-CSI,

Associate Professor, M S Ramaiah Institute of Technology

**Contact and Email :** 8861765345 and sumana.m@msrit.edu

**Organizing Committee Members:**

**Name:** Dr Megha P Arakeri

**Affiliation:** Senior Member IEEE, IEEE CIS Chair., IEEE CIS Student Branch Chapter Advisor (SBC62841C), Bangalore

Associate Professor, M S Ramaiah Institute of Technology

**Contact and Email :** 9008977922 andmeghaparakeri@msrit.edu

**Name :** Dr Vijaya Kumar B P

**Affiliation:** Senior Member IEEE, IEEE CIS technical advisor,

Professor, M S Ramaiah Institute of Technology

**Contact and Email :** 9980634134 and vijaykbp@msrit.edu

**Name :** Dr Sinthuja M

**Affiliation:** IEEE member ,Assistant Professor,

M S Ramaiah Institute of Technology

**Contact and Email:** 9629737677 and sinthuja@msrit.edu