IEEE Computational Intelligence Society Strategic Plan
2023 – 2025

Contents

Executive Summary

The IEEE Computational Intelligence Society has adopted a new strategic plan for the years 2023 - 2025. This document lays out a set of priorities and a framework for advancing work across our society over the next three years. The plan incorporates our updated Mission and Vision Statement. 5 Strategic goals were developed and are shaped by and follow our Core Values and Guiding Principles of:

- Community
- Integrity, quality, trustworthiness, and transparency
- Diversity, inclusion, equity, accessibility and human well-being
- Service to humanity
- Partnership
- Growth and Nurturing

The CIS Strategic goals have been designed to be completed within the duration of this plan. Each goal incorporates a set of measurable objectives and each objective has its own deadline. This document is a resource that will guide decision-making, allowing new proposals and initiatives to be examined for how well they fit against the Society's strategy. Further, it guides our annual Living Strategic Plan (operations plan) where the detailed Strategic tasks (activities) and their current progress are monitored.

CIS would like to thank the volunteer members of the 2022 and 2023 Executive Committee, Administrative Committee, Strategic Planning Committee and the Working groups who provided their time, expertise and valuable input towards the development of this plan.

Computational Intelligence Society Description

The IEEE Computational Intelligence Society (CIS) is a community of over 8,500 members across the globe. We welcome our members to volunteer and actively engage in the Committees, Subcommittees and Task Forces of our society. Such activities promote Education, Membership, Publications, Conferences, Technical and Industrial & Governmental Activities that benefit all CIS members as well as contributing to the global Artificial Intelligence (AI) community.

Founded on three main pillars of Neural Networks, Fuzzy Systems and Evolutionary Computation, Computational Intelligence continues to evolve the widespread computational paradigms of AI and plays a major role in developing productive, responsible, and equitable Artificial Intelligence systems.

CIS Mission Statement

To serve as an incubator for the advancement of computational intelligence and the associated professional growth of all our members, fostering technological and foundational innovation and excellence, exploring new and emerging directions and applications of computational intelligence for the benefit of humanity and the natural world.

CIS Vision Statement

To be the preferred home for students and professionals seeking knowledge growth and dissemination of Computational Intelligence, so as to address the world's greatest challenges together and achieve a better tomorrow, and the day after.

CIS Field of Interest (Approved by IEEE Technical Activities Board – November 2023)

The Field of Interest of the Computational Intelligence Society (CIS) shall be the theory, design, application, and development of nature and brain inspired knowledge representation and computational paradigms emphasizing neural networks, evolutionary algorithms, swarm intelligence algorithms, fuzzy and rule-based systems and cognitive systems, together with learning and artificially intelligent systems in which these paradigms are contained.

CIS Core Values and Guiding Principles

CV-A   **Community**

- Build open and strong communities within IEEE CIS and across IEEE
- Reach out to stakeholders and communities beyond our society
- Promote public awareness and understanding of Computational Intelligence (CI)
- Increase the value of the membership to all members
- Promote a culture of respect for fellow practitioners, for the profession, and for volunteers and employees within CIS
- Practice positive relationships through respectful interactions across all our communications

CV-B **Integrity, quality, trustworthiness, and transparency**

- Be a trusted and unbiased source of technical information for CI
- Promote research integrity
- Promote reproducibility of research
- Promote discussion, practice, awareness and design of ethical (trustworthy) AI
- Promote integrity and transparency of all CIS activities including, reviewing, conference organization, awards

CV-C   **Diversity, inclusion, equity, accessibility and human well-being**

- To provide and encourage equitable opportunities for all within CIS
- To reach out to those with few current opportunities to engage in CIS and become part of the community
- Promote consideration of (but not limited to) region, gender, experience level, type of employer, in all CIS activities
- Promote consideration of human well-being aspects - work-life balance, personal circumstances and positive interaction; for our volunteers, members and non-members

CV-D   **Service to humanity**

- Leverage science, technology, and CI to benefit human welfare / well being
- to address global grand challenges as well as to promote awareness of its advantages and limitations and the need for responsible CI

CV-E   **Partnership**

- Grow a positive culture for volunteerism
- Ensure a mechanism for respectful communication both within CIS and across IEEE

- Value contributions at all levels of the organization
- Facilitate the tasks of all volunteers

CV-F **Growth and nurturing**

- *Encourage education as a fundamental activity within CIS*
- *Promote education at all levels and at all times, to ensure a pipeline of students to preserve the profession, to support and encourage continued education, and to use education for outreach within the CI community*
- *Ensure that the educational resource materials are complete, of high quality, and up to date*

CIS Strategic Goals

A. To grow and nurture a positive and supportive culture of **volunteerism**: to achieve a sustainable generation of active CIS volunteers and to achieve improved effectiveness for our volunteer roles.

B. To improve and extend CIS **dissemination and outreach**: to increase awareness and highlight CI success stories and promote further success through increased partnerships, increased lobbying and educational support.

C. To increase **quality and integrity** across all CIS activities

D. To improve **diversity, inclusion, equity, accessibility and human well-being** as an integral part of the functioning of CIS

E. To identify and activate new initiatives that address global **grand challenges**, for the benefit of humanity and the natural world

The five CIS Strategic Goals identified for 2023-25 highlight the internal goal with respect to our volunteers (A), our external goal (B), our approach to quality improvements (C), our ongoing focus on diversity, inclusion, equity and accessibility (D) and our strategic activities to increase our contributions to addressing the world's greatest challenges (E).

The CIS Strategic goals have been designed with a 3 year duration. Each goal has a set of objectives, as highlighted in Table 1. Each objective has its own deadline of 1 to 3 years.

Table 1: CIS Strategic Goals and Objectives

	Goal	Objectives
A	volunteerism	O-A1, O-A2, O-A3
B	dissemination and outreach	O-B1, O-B2, O-B3
C	quality and integrity	O-C1, O-C2, O-C3, O-C4, O-C5, O-C6
D	diversity, inclusion, equity, accessibility and human well-being	O-D1, O-D2, O-D3
E	grand challenges	O-E1, O-E2

CIS Objectives

Objectives for Volunteerism (A)

O-A 1   **to attract and retain** volunteers to achieve a volunteer growth *in all sectors (academia, industry and government)*

- to encourage volunteers but start with **'simple'** positions
- to increase **mentoring and coaching** provisions to create an attractive arena for personal development in various CIS volunteer roles.
- to **empower** and **energise** volunteers to achieve through interesting and challenging roles
- to provide **recognition** for volunteer efforts to ensure that volunteerism is rewarded

O-A 2   to ensure manageable and **supported** volunteer roles, driving efficient volunteerism

- to structure mentoring and coaching activities to be attractive to the volunteers providing the mentoring to achieve new and improved **technical initiatives** for conferences to ensure sufficient support for **conference** organiser roles
- to achieve new and improved **technical initiatives** for **publications** to support EiC and AE roles as well as achieving efficient turnaround time
- to **identify volunteer training gaps** (members who want to do a better job) and deliver the training
- to ensure overlaps between sub-committees and/or Committees are minimalized so as to ensure volunteer **role integrity** whilst ensuring improved effectiveness through improved **integration**

O-A 3   to achieve increased **professionalism**: mutual professional respect, trust, integrity and ethical behaviour

> ➢ all volunteers take responsibility for checking wording and constructivism in feedback and reviews

Objectives for Outreach (B)

O-B1   to increase **awareness** of Computational Intelligence in all sectors (academia, industry and government)

> ➢ to ensure understanding of the Computational intelligence **branding**
> ➢ to lead political & NGO engagement & lobbying around Computational Intelligence

O-B 2   to increase the **breadth** of outreach coverage

> ➢ to ensure **global coverage**, developing and promoting activities that meet the needs of different geographic areas
> ➢ to establish a relationship with **every relevant student and professional** e.g. via summer schools
> ➢ to achieve a stronger CIS presence in **High-Tech communities** and **industry**
> ➢ to increase social media & press coverage following a clear **marketing and communication** plan
> ➢ to extend the education portal outreach for school teachers

O-B 3   to promote **CI achievements in research, innovation and education**

> ➢ to extend recognition of celebration of academic impact to **industry accomplishments and impact**
> ➢ to highlight **success** stories across the diverse groups within CIS
> ➢ to highlight **successful CIS initiative**s both within and out with CIS.

O-B4   to develop further **partnerships** to meet technology revolutions/disruptions ahead and to meet the needs of CI

> ➢ with other IEEE societies
> ➢ other Technology Communities

- ➤ other communities and professional societies across disciplines
- ➤ industry and government
- ➤ third sector

Objectives for Quality and Integrity (C)

O-C1   to increase the quality of the CIS **conference participation experience** and increase the independent **conference rankings**

O-C 2   to increase the **recognised value** of CIS membership through a 20% increase in membership in all categories (academia, industry and government)

- ➤ to engage with young professionals, **providing value** at all stages of their career.
- ➤ to ensure that **industry professionals value** the CIS society as a major resource through the identification of practitioner focused activities, products and services
- ➤ to increase **networking and knowledge transfer opportunities** for members
- ➤ to improve **Computational Intelligence competencie**s of students and professionals through educational products and services.

0-C3   to achieve **a structured learning** environment for our members and young students

- ➤ to support the transition from Young Professional to Vice Presidents (YPs to VPs)
- ➤ to achieve learning pathways to guide novice learners
- ➤ to develop program opportunities for chapters
- ➤ to extend the summer schools programs

0-C4   to improve **publication rankings** of CIS journals

- ➤ to improve the overall performance of the portfolio of CIS journals across a range of publication metrics (including metrics of impact, timeliness of peer review, and financial performance)

0-C5   to support **growth** in Computational Intelligence technologies and applications

- ➤ to lead the way in **newer** Computational Intelligence **technical areas** including, but not limited to
  - o explainable/interpretable AI &Sustainable AI
  - o exploiting brain science/neuro science to CI
  - o ethics in AI
- ➤ to support **commercial innovation** of computational intelligence techniques and

applications through educational products and services.

> to build/expand **cross-disciplinary** and interdisciplinary **global** communities

0-C6   to increase **accountability** and **transparency** whilst protecting **confidentiality** in CIS activities and operations

> to improve CIS ADCOM informed decision making
> to increase reviewer professionalism and ensure a quality review process

Objectives for Diversity, Inclusion, Equity and Accessibility (D)

O-D1   to increase the number of CIS volunteers from **underrepresented** groups, including but not limited to, geography, gender, experience level, and type of employer

0-D2   to increase the attention to **inclusiveness** across different geographical areas

> to Increase awareness of under-represented areas
> to increase participation accessibility through awareness of cultural and/or timing challenges

O-D3   to establish a **culture** that is connected and reflects our core values

> to identify where the sense of belonging can be improved, for all our members.

Objectives for Grand Challenges (E)

O-E1   to provide and lead solutions that meet the United Nations **Sustainability** Development Goals

> promote this research - special sessions / issues
> promote sustainability awareness of authors
> market sustainability contributions to increase interest and awareness

0-E2   to **foster partnerships** with industry to face such challenges

Table 2: CIS Objectives - deadlines and metrics

#	Objective	Deadline	Metrics
O-A1	**to attract and retain** volunteers to achieve a volunteer growth in all sectors (academia, industry and government)	Dec 25	- # inactive volunteers - # active volunteers - # volunteers > 3 years - # new volunteers per year - # participants in mentoring initiatives
0-A2	to ensure manageable and **supported** volunteer roles, driving efficient volunteerism	Dec 24	- volunteer role support satisfaction - # training courses available - # volunteers attending training - technical initiative user satisfaction
O-A3	to achieve increased **professionalism**: mutual professional respect, trust, integrity and ethical behaviour	Dec 25	- volunteer satisfaction with a positive culture - author satisfaction with constructive feedback - % reviews not providing constructive feedback
0-B1	to increase **awareness** of Computational Intelligence in all sectors (academia, industry, government)	Dec 25	- views of online marketing materials about CI and/or CIS - increase in articles about CI (news articles, blogs, social media, etc?) - # contributions to political & NGO
O-B2	to increase the **breadth** of outreach coverage	Dec 25	- increase in coverage and volume in resource center - # summer schools - # participants in summer schools - # geographic initiatives - increase in industry and government members - increase in industry and government participation in conferences - increase in industry and government volunteers
O-B3	to promote **CI achievements** in research, innovation and	Dec 25	- # new awards/recognitions created - # regional success announcements

	education		- # internal communication of success stories
O-B4	to develop further **partnerships** to meet technology revolutions/disruptions ahead and to meet the needs of CI	Dec 25	- # new partnerships
0-C1	to increase the **quality** of the conference participation experience and the independent conference rankings	Dec 25	- # returning authors - # returning conference participants - CORE ranking - CFS ranking
0-C2	to increase the **recognised value** of CIS membership through a 20% increase in membership in all categories (academia, Industry and government)	Dec 25	- # of members of different categories - # initiatives meeting the different career stages - # new networking/knowledge transfer initiatives - increased member satisfaction with educational products
O-C3	to achieve **a structured learning** environment for CIS members and young students	Dec 24	- increase in the #YPs in the different levels of leadership roles - increase in education material available for high school students, young professional and for professionals from different sectors - # learning paths created
O-C4	to improve **publication rankings** of CIS journals	Dec 25	- Impact factor - Eigenfactor - Citescore - Influencescore
O-C5	to support continued **growth** of Computational Intelligence technologies and applications	Dec 25	- # special sessions /special issues/white papers in new Technical areas - # innovation products and services - # global communities
O-C6	to increase **accountability** and **transparency** whilst protecting **confidentiality** in CIS activities and operations	Dec 24	- sufficiency of information for ADCOM decision making - # Reviews (conferences and publications) lacking professionalism
O-D1	to increase the number of	Dec 25	identification of suitable metrics is a

	members of **underrepresented** groups		strategic task for 2023
O-D2	to increase the attention to **inclusiveness** across different geographical areas	Dec 25	identification of suitable metrics is a strategic task for 2023
O-D3	to establish a **culture** that is connected and reflects our core values.	Dec 24	identification of suitable metrics is a strategic task for 2023
O-E1	to provide and lead solutions that meet the United Nations Sustainability Development Goals	Dec 25	- # projects addressing sustainable development Goals - increase in # of authors clearly identifying sustainability goals addressed.
O-E2	to **foster partnerships** with industry to face such challenges	Dec 24	- # related partnerships established

CIS Society Analysis

A CIS SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) has been conducted in a divide and conquer fashion, breaking down the society into 8 areas, each conducting their individual SWOT analysis. These 8 areas involve:

1. Governance
2. Finance
3. Conferences
4. Publications
5. Technical Activities
6. Membership
7. Education
8. Industrial & Government Activities

The SWOT Analyses have provided input to the process of identifying and refining the CIS Goals and Objectives. Further, the analyses is applied during the process of identifying the Strategic Tasks for the annual Living Strategic Plan.

Marketing and Communication Plan

The creation of the CIS Marketing and Communication Plan for 2023-2025 is a strategic activity that is part of the Living Strategic Plan for 2023. As a first step, two SWOT Analyses have been conducted considering marketing and external communication as well as internal communication.

The CIS Marketing and Communication plan will convey how each marketing activity will accomplish specified marketing objectives. Such activities will include which campaigns, content, channels, and marketing software to apply, together with which metrics to apply to track their success.

The Marketing and Communication plan seeks to highlight the value of CIS Activities to a variety of audiences and customers. To this end, the target audience will be identified to capture segmented audience groups and this target audience definition will be applied when selecting the appropriate marketing activity for each. The types and volume of content to create as well as the channels to distribute this content to, will also be defined.

Each new CIS activity within the Living Strategic Plan will consider Marketing / Communications of the activity during the planning phase so as to ensure the appropriate resource allocation for marketing/communicating the task. Further, a stronger collection engine for internal activity will be developed.

Capacity

Volunteer Capacity

As a society primarily based on volunteer resources, CIS is committed to further improving volunteerism – recruiting new volunteers, retaining our existing volunteers, recognizing our volunteers, training our volunteers and ensuring diversity and inclusion as well as supporting our volunteers in the different roles.

To ensure sufficient resources in terms of the number of volunteers and the activity of such volunteers, many new initiatives are planned for 2023-2025, as reflected in the strategic goals and objectives. Further, strategic task initiation will involve not just the members of the SPC but allow for other CIS volunteers to become involved in a particular SPC task. In these ways, CIS will support an appropriate growth in volunteerism and enable a flexible assignment of volunteers to role, to ensure that the capacity required for a particular task is met.

Financial Capacity

Most strategic tasks require no additional financial support and are driven to completion, entirely by the efforts of CIS Volunteers. However, some larger projects require initiative funding due to the scale of the project or to ensure continuity and support.

Initiative funding is the main source of such funding. To meet the funding needs of such projects in the following LSP, initiative funding for such projects are proposed around 6 months prior. However, in the case where initiative funding is not available for a given project, a proposal for operational funding may be proposed.

Operations and Evaluation Plans (Living Strategic Plan)

Strategic Activities Structure

The Living Strategic Plan (LSP) presents the operational plan for any year, highlighting all planned and ongoing strategic tasks for that year. For the Strategic Plan 2023-2025, three LSPs will be created for 2023, 2024 and 2025 respectively.

There are two levels of strategic activities within the LSP:
1. Tasks that are conducted within the Strategic Planning Committee (SPC), represented by task specific working groups (WGs). Such WGs are established where there is a need for collaboration across different standards committees to achieve the objective of a particular task. A WG consists of members of the SPC together with any other CIS members that are needed for the WGs assigned task.

2. Tasks that are conducted within the Strategic Planning sub-committees (SP-subs) of the individual Standards Committees. Similar to the WGs, members of the SP-subs, for a particular task, may be extended with other CIS members, as needed.

All Strategic tasks (WGs and SP-subs) are reported to the Strategic Planning Committee (SPC). The SPC is thus responsible for the collective strategic efforts, enabling all strategic activities to be evaluated with respect to the current LSP and with respect to the CIS Goals and Objectives.

Strategic Activities Evaluation

Metrics are selected as appropriate for each and all strategic tasks. Such metrics may be qualitative or quantitative. It should be noted that the metrics for the CIS Goals and Objectives, are those highlighted in the appropriate sections.

1. Strategic Tasks

   Each task within the LSP has a measurable objective, deadline and metrics for evaluation. Further, each task is assigned to the appropriate CIS Strategic Goal(s) and Objective(s).

   A qualitative self-evaluation of ongoing strategic tasks by the WG or SP-sub chair, will be updated **bimonthly**. Such evaluation will seek to measure progress (during the task planning

and execution phases) and success (post execution).

2. CIS Objectives

   Each CIS objective has a deadline and metric(s) for evaluation and one or more strategic tasks assigned at a particular time.

   An **annual** qualitative evaluation of the CIS Objectives involves the fusion of the evaluation of the Objective's underlying tasks together with the metric(s) assigned to the Objective.

3. CIS Strategic Goals

   Each CIS goal has a 3-year duration and its own objectives, each with its own deadline and metric(s) for evaluation.

   An **annual** qualitative evaluation of the CIS Strategic Goals involves the fusion of the evaluation of the Goal's underlying Objectives.

   It should be noted that 'progress' is measured with regard to the work to be completed, i.e. the path to completion; rather than the progress so far. Such evaluation will enable the SPC to better assign resources to different strategic tasks and trigger new tasks that may be required.