Call for Papers

------- Special Section on Computational Intelligence and Big Data for Scientific and Technological Resources and Services -------

The IEICE Transactions on Information and Systems announces that it will publish a special section entitled "Special Section on Computational Intelligence and Big Data for Scientific and Technological Resources and Services" in August 2021.

There has been an explosive growth of a wide variety of scientific and technological resources in both research communities and industry sectors. The former includes experimental/simulation/observation datasets, intellectual products such as publications and patents, etc. and the latter includes transaction records, business models, processes, and workflows, etc. Such resources have not been extensively explored and utilized by end users mainly because: i) they are widely distributed at various geographical locations such as laboratories, universities, companies, etc. and are typically isolated from each other, ii) there is a lack of suitable models, mechanisms, and protocols for their sharing, reuse, exchange, and distribution, and iii) their support for the real economy requires intelligent aggregation and information retrieval of big data from disparate sources, which are complex and challenging.

The rapid advance in high-performance computing and the pervasive use of machine learning and data mining have made it now possible to process and analyze large volumes of high-dimensional, multimodal, heterogeneous, and structured/unstructured data. As a result, the above situation is also being revolutionized by the power of computational intelligence and big data in the area of scientific and technological services. Particularly, many data-driven techniques and service models have been proposed or are under active development for cross-platform resource integration, demand prediction, product recommendation, coordinated search, intelligent matching, operation optimization, etc. to improve business performance and research productivity based on scientific and technological resources.

The purpose of this special issue is to encourage interactions and collaborations between researchers in scientific domains and technologists and practitioners in industry to promote and demonstrate how recent developments of artificial intelligence and big data technologies can be used to integrate and explore various scientific and technological resources to improve business intelligence and accelerate scientific innovation. It is envisioned that the combination of big data with a large collection of computational intelligence algorithms will reach the level of true intelligence in the aggregation, sharing, and utilization of scientific and technological resources to serve the real economy. We welcome original research articles in all aspects of computational intelligence and big data towards the development of scientific and technological services and the support for complex ecosystems of distributed resources.

1. Scope
This special section aims at timely dissemination of research in these areas. Possible topics include, but are not limited to:
- AI-assisted resource aggregation and integration
- Intelligent discovery of scientific and technological resources
- Models and protocols for sharing and reuse of scientific and technological resources
- Big data analysis of distributed scientific and technological resources
- Complex giant systems of distributed resources
- Pattern recognition for scientific and technological resources
- Data-driven technology for scientific and technological resources
- Language inference technology for scientific and technological resources
- Collaborative analysis and mining of multi-core value chains
- Precise search
- Intelligent matching
- Intelligent transactions
- Intelligent service technology
- Evaluation optimization technology
- On-demand customization for regional scientific and technological resources
- Intelligent services of regional scientific and technological resources
- Intelligent learning and mining of regional service value chains
- Cloud platform support for scientific and technological resources

2. Submission Instructions
- A manuscript should be prepared according to the guideline given in "The Information for Authors" (https://www.ieice.org/eng/shiori/mokuji_iss.html). We encourage the authors to use the IEICE Style File (https://www.ieice.org/ftp/index-e.html). The preferred length of the manuscript is 8 pages for a PAPER and 2 pages for a LETTER with the format determined by the IEICE Style File.
- Submit the manuscript through the IEICE Web site (https://review.ieice.org/regist/regist_baseinfo_e.aspx). Choose "[Special-BD] Computational Intelligence and Big Data for Scientific and Technological Resources and Services" in the menu of "Journal/Section" in the submission page. Do not choose "[Regular-ED] Information and Systems" or other special sections.
- Authors must agree to the "Copyright Transfer and Page Charge Agreement" via electronic submission.
- Submission deadline of the manuscript is 25 October, 2020.

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* **Upon accepted for publication, all authors, including authors of invited papers, should pay the page charges covering partial cost of publication around 15 April 2021. If payment is not completed by 15 May, 2021 your manuscript will be handled as rejection.**

* The standard period of 60 days between the notification (of conditional accept) and the second submission can be shortened according as the review schedule.

* At least one of the authors must be an IEICE member when the manuscript is submitted for review. Invited papers are an exception. We recommend authors unaffiliated with IEICE to apply for the membership (https://www.ieice.org/eng/join/member.html).

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