"Guidelines and Ethical Standards" for Data Scientists

As practitioners of data science, we are expected to maintain high standards of conduct, not just to our profession but also towards the industry on a whole.

In lieu of the above, we have created this code of ethical standards for professionals in data science and analytics. This guidelines is aimed to make professionals responsible, well aware and confident about their conduct while working this field.

We believe that the overall growth of data science industry would depend on our collective self-regulation as ethical professionals and be aware towards keeping the needs of the customers and our profession as whole, **first**.

These guidelines and ethical standards apply specifically to:
1. All ADaSci members
2. Individuals who are not members of ADaSci but meet one or more of the following criteria:
   a. Non-members who hold a CDS certification
   b. Non-members who apply to commence a CDS certification process
   c. Non-members who serve ADaSci in a volunteer or any other associated capacity

Application of these or any other ethical guidelines generally requires good judgment and common sense. The guidelines and ethics for Data Scientists abide them by the following standards:-

I. Duties to Own Professionalism
II. Duties to Employer
III. Duties to Clients
IV. Duties to Industry
V. Duties as a CDS charter

Standard I: Duties to Own Professionalism

1. Charted data scientists to maintain objectivity and independence so that their clients will have the advantage of their works and assessments unaffected by any potential irreconcilable circumstance or other condition unfavorably influencing their judgment. Every charter holder should attempt to maintain a strategic distance from circumstances that could cause or be seen to cause lost independence and objectivity in recommending analytics or taking analytics actions.

2. Chartered data scientists will participate in the analysis that aids decision-makers in business, industry, academia, government, military, i.e. all facets of society; therefore, it is imperative to establish and project an ethical basis to perform their professional responsibly. Furthermore, practitioners are encouraged to exercise good professional citizenship to improve the public climate for, understanding of, and respect for the use of analytics across its range of applications. In general, data scientists are obliged to conduct their professional activities responsibly, with attention to the values of consistency, respect for individuals, autonomy for all, integrity, justice, utility, and competence.

3. These guidelines recognize that data scientists have obligations to a variety of groups, including society, employers and clients, colleagues, research subjects, AdaSci (Association of Data Scientists), and the profession in general. Responsibilities regarding each of these groups are further described next. The chartered data scientists are expected to follow the duties to clients and employers. These duties include loyalty to stakeholders, prudence, fair business dealing, providing suitable solutions and preservation of confidentiality.

4. The data scientists have societal obligations as well to perform their work in a professional, competent, and ethical manner. Data scientists should adhere to all applicable laws, regulations, and international covenants.

Standard II: Duties to Employer

1. The Charted data scientists have several important duties to their employers. CDS are expected to work with stakeholders to decide how to utilize business information for rational business solutions. They are expected to search for approaches to get new data sources and evaluate their precision. They are responsible for access and analyze concerned databases to simplify and improve solution development and advancement, showcasing methods, and business processes. CDS are required to provide custom solutions by creating data models and algorithms to improve end-user experience in all kinds of related functionalities. The CDS is expected to facilitate different specialized and concerned groups to implement predictive models and assess results. They can create procedures, systems, and tools to analyze the performance of the model execution while ensuring accuracy in the result.

2. It is the CDS's responsibility to assure employers that an analytical approach is suitable to their needs and resources and include presenting the capabilities and limitations of analytical methods in addressing their problem. Data scientists should honestly and clearly state their qualifications and relevant experience. It is imperative to fulfill all commitments to employers and clients, guard any privileged information they provide unless required to disclose, and accept full responsibility for their performance. Where appropriate, present a client or employer with choices among valid alternative approaches that may vary in scope, cost, or precision. Apply analytical methods and procedures scientifically, without predetermining the outcome. Resist any pressure from employers and clients to produce a particular result, regardless of its validity.

3. Data scientists have a responsibility to promote the effective and efficient use of analytical methods by all members of the research and/or development teams and to respect the ethical obligations of members of other disciplines. When possible, professionals share nonproprietary data and methods with others; participate in peer review, focusing on the assessment of methods, not individuals. Respect differing professional opinions while acknowledging the contributions and intellectual property of others. Those professionals involved in teaching or training students or junior analysts have a responsibility to instill in them an appreciation for the practical value of the concepts and methods they are learning.

4. Those in leadership and decision-making roles should use professional qualifications about analytic professionals' hiring, firing, promotion, work assignments, and other professional

matters. Avoid harassment of or discrimination based on professionally irrelevant bases such as race, color, ethnicity, gender, sexual orientation, national origin, age, religion, nationality, or disability.

Standard III: Duties to Clients

1. For any professional individual or organization, the interests of its customers are foremost. A Chartered Data Scientist must have an obligation to a customer and need to incorporate an obligation of reliability and an obligation to practice sensible consideration. Analytical activities must be done for the sole advantage of the client and in a way the CDS accepts, given the well-established realities and conditions, to be the greatest advantage of the customer. CDS must exercise a similar degree of foresightedness, judgment, and care that they would apply in the management of their own advantages in comparable conditions. CDS should place the client's interests first by disregarding any firm or personal interest in motivating a recommended scientific and analytical service.

2. Chartered data scientists must deal fairly and objectively with the clients when providing analytical solutions, making scientific or analytical recommendations, taking scientific or analytical actions, or engaging in any other professional activities. The term fairly business dealing implies that the data scientist must take care not to discriminate against any of their clients by taking favor of any other client or providing more weightage to any other client when providing their services. It also does not mean to reach each of the clients equally because it may be very difficult to approach and give them equal time through any medium of communication. Each client has different kinds of requirements, business principles, and objectives so all the services provided may not be equal.

3. The chartered data scientists are required to preserve confidentiality about current, former and prospective client's details. The confidentiality of the information may be disclosed in three conditions. First, the information concerns illegal activities on the part of the client. Second, when the disclosure of confidential information is required by law. Third, if the client or prospective client permits the same. In the first two conditions, the CDS may have a commitment to report the activities to the competent authorities.

Standard IV: Duties to Industry

1. Chartered data scientists are responsible for the growth and development of the business which is focused on data science and analytics. The CDS is responsible for suggesting the business on the potential with respect to data, to give new bits of knowledge into the business' strategic, using machine learning, advanced statistical analysis, data mining, and data visualization systems, to make a way that empower improved business execution. The Data Scientists are expected to play a managerial role on projects of the business where he is required to use and combine enormous volumes and an assortment of data so as to upgrade the business comprehension of individual sections, readiness, results, and decision focuses.

2. The CDS is expected to consolidate information, computational science, and innovation with end-user-oriented business information in the business setting, to drive high-value insights into the business and drive at a full pace through the functions available to the business. The CDSs are required to perform a vital job in the advancement of new ways to understand industry trends and consumer behaviors as well as approaches to solve complex industry issues through their skills and knowledge.

3. The chartered data scientists are expected not to play alone in the industry but they are expected to collaborate and associate with other professionals and experts working in the same domain in the industry. Along with the responsibilities of the current employer, they also have the responsibility to identify and current trends in the industry and future needs which need to be presented in public forums such as workshops, conferences or other similar events. It will help beginners to catch the stream and create opportunities for the generation of new ideas. It is also the responsibility of a charter holder to share their knowledge and skills with professional associates if required in order to help them in finding the solution.

Standard V: Duties as a CDS Charter

1. As a Chartered Data Scientist (CDS), there are several additional duties and responsibilities associated with the holder of this charter. These duties and responsibilities are additional to the above-mentioned standards and duties. The CDS charter holder must not take part in any activity that bargains the reputation or uprightness of the Association of Data Scientists (ADaSci) or the CDS charter or the honesty, legitimacy, or sanctity of ADaSci. Any such conduct is barred that undermines the public's opinion that the CDS charters represent a symbol of accomplishment based on their merit and moral conduct.

2. It is also expected from a CDS charter holder to always follow the ethical ways in the collection of data, building models, and generating results that are suitable and fruitful for either individual or organization and which do harm any entity in any way. No kind of unethical hacking is allowed for the sake of relevant data collection and it is also expected not to breach any type of security or legal boundaries. If a project involves research subjects, including census or survey respondents, a CDS charter holder will know and adhere to the appropriate rules for the protection of those human subjects. Be particularly aware of situations involving vulnerable populations that may be subject to special risks and may not be able to protect their own interests. This responsibility includes protecting the privacy and confidentiality of research subjects and data concerning them. CDS will maintain personal responsibility for all work bearing their name and will avoid undertaking work or co-authoring publications for which they would not want to acknowledge responsibility.

3. The chartered data scientists are expected to always be updated related to industry and social technological trends. It is their moral responsibility to prepare study and research reports based on their skills and technical experiments and present these reports to the general public from time to time through journals, articles or social events such as conferences, workshops, symposiums etc. These reports will help the people with interest in order to open a scope of new innovations and developments. This will also be helpful for the people in society to let them be aware about the latest developments in the field of data science.

Alleged Misconduct

If a chartered data scientist is found not adhere to the above-defined standards or found violating any of these standards, it will be considered as alleged misconduct. Chartered data scientists must avoid condoning or appearing to condone careless, incompetent, or unethical practices.

Misconduct broadly includes all professional dishonesty, by commission or omission, and, within the realm of professional activities and expression, all harmful disrespect for people, unauthorized or illegal use of their intellectual and physical property, and unjustified detraction from the reputation of others.

Recognize that differences of opinion and honest error do not constitute misconduct; they warrant discussion, but not an accusation. Questionable scientific practices may or may not constitute misconduct, depending on their nature and the definition of misconduct used. Do not condone retaliation against or damage to the employability of those who responsibly call attention to possible scientific error or misconduct.