Data Science Program Accreditation

ABET

WHAT IS ACCREDITATION?

Accreditation is a periodic review process to determine if educational programs meet defined standards of quality. In the U.S., accreditation is voluntary, decentralized and carried out by many non-governmental, non-profit organizations. The process typically involves an external quality review by a team of professional experts from academia and industry. Additional volunteer experts review team findings and make the accreditation determinations while ensuring consistency of the decisions.

WHY IS ACCREDITATION IMPORTANT?

Accreditation is an essential element of professional responsibility. A typical definition of a profession is: A disciplined group of individuals who adhere to high ethical standards and **uphold themselves** to, and are **accepted** by, the public as possessing special knowledge and skills in a widely recognized, organized body of learning derived from **education** and training at a high level, and who are prepared to exercise this knowledge and these skills in the interests of others[1]. Since higher education is at the headwaters of any profession, it behooves its members to establish standards for the entry-level specialized knowledge and verify adherence to those standards.

Additionally, accreditation provides benefits to a wide variety of stakeholders, including:

- **Prospective students** - helping them choose a quality program
- **Employers** - helping them hire graduates with the knowledge and skills to be successful upon entering the workforce
- **Educational institutions and faculty** - allowing them to distinguish themselves with an external stamp of approval
- **Society in general**, which relies on the services of professionals

WHY IS DATA SCIENCE ACCREDITATION IMPORTANT?

Data science draws on knowledge, skills and abilities from computing, mathematics and statistics, all applied in the context of domains that make use of data. The pervasive reach and multi-disciplinary nature of data science causes special challenges in uniting traditionally separate disciplines into a coherent approach that produces ethical and well-trained practitioners. Agreement on standards is an important step in the maturation of an emerging discipline. Accreditation provides impetus for this convergence.

Additionally, the impact of data science is becoming pervasive on individuals and society. At its best, the impact has provided substantial benefits and promises even greater good. Unfortunately, the damage that can result from the misuse or misunderstanding of data is becoming all too apparent, adding urgency to preparing the workforce for proper and ethical application of the technology.

[1]Definition from Professions Australia

WHAT IS ABET ACCREDITATION?

ABET accreditation provides assurance that a college or university program meets the standards set by its technical profession. ABET accreditation criteria focus on what graduates are able to do (student outcomes), in the framework of a continuous quality improvement process. With ABET accreditation, students, employers and the society we serve can be confident that a program meets the quality standards that produce graduates prepared to enter a global workforce.

ABET's 35 member societies provide over 2,200 volunteer experts from industry, academia and government to conduct the accreditation process. To date, 4,144 programs at 812 colleges and universities in 32 countries have received ABET accreditation. Over 100,000 students graduate from ABET-accredited programs each year, and millions of graduates have received degrees from ABET-accredited programs since its inception in 1932.

DATA SCIENCE ACCREDITATION WITHIN ABET

ABET and member society CSAB formed a joint task force of professional society experts to investigate data science accreditation. The task force found that a majority of employers and existing academic programs focus on the computing aspects of data science. Criteria for such programs were developed, presented at several public forums and revised in response to public feedback. These initial criteria were approved by the ABET governing bodies in July 2020. Pilot accreditation will take place in the 2021-22 accreditation cycle. The task force continues to investigate programs that have other academic disciplinary emphases beyond computing. Engagement with the public on non-computing focused criteria will be part of this process. The goal is to make accreditation available for all qualified programs, regardless of a specific program's data science focus.

LEARN MORE ABOUT ABET ACCREDITATION

Home page:
www.abet.org

About ABET accreditation:
www.abet.org/accreditation

Accreditation process:
www.abet.org/accreditation/get-accredited/accreditation-step-by-step

Criteria for Accrediting Computing Programs, 2020–2021:
www.abet.org/accreditation/accreditation-criteria

Program Criteria for Data Science and Similarly Named Computing Programs for public review and comment:
www.abet.org/accreditation/accreditation-criteria/accreditation-changes

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