DATA SCIENCE INSTIUTE

Data Science Institute



ABOUT US

he Data Science Institute serves as an innovative arm, bridging academic research, professional education and industry demands. It operates alongside the disciplines within IDC's schools and leverages its unique Interdisciplinary structure and culture.

The institute hosts joint academic industry ventures, and serves as a source for applied research breakthroughs and technological innovation

DΔTΔ SCIENCE INSTIUTE

* IDC HERZLIYA * ...

Data Science Institute

VISION AND MISSION STATEMENT

he world is undergoing an unprecedented burst of technological advancement and innovation, made possible by the rapid increases in computing power coupled with intensive digitization and data collection. This digital revolution drives business, social, and industrial transformation that generates an unprecedented amount of data (a.k.a. Big Data).

Sources of data include the internet, genomic and clinical data, smartphones, personalized devices, video cameras and other sensors connected via the Internet of Things (IoT), business and financial data, and more.

Data science is at the forefront of innovation and entrepreneurship, enabling and refueling massive economic growth and cultural shifts. It promises to creep into every single area of our lives, with each profession having to reevaluate how to deal with data and draw meaningful insights from it.



GOΔLS

The promotion of applied academic research

The institute strives to make an impact on the industry via industry-graded PoCs and deliverables, such as working prototypes.

Hands-on practical education



7

Students work in joint, cross-domain teams, mastering algorithmic and product development methodologies while collaborating with industry professionals.



There is a real need for relevant academic research that can bridge the gap between academia's strengths and capabilities and industry's needs



STRUCTURE

he heart of the institute is a set of focus areas, each of which represents an interlock between the enabling technologies, selected academic disciplines, and relevant industry/business segments.

Each focus area is led by a prominent data scientist and a prominent researcher of the partnering academic discipline, together with their students.

This unique structure operates on three fronts:

- > Research Development of theories and methodological tools
- Education Development and delivery of professional training programs, as well as hands-on guidance in small groups in modern R&D methodologies and product management.
- Technological Innovation Development of applications and systems





R esearchers and students from the relevant schools across IDC are invited to join existing activities and initiate new ones, while receiving full support (funding, computation & data resources, and professional assistance). This structure is designed to nurture multidisciplinary efforts and enable teamwork.

The activities are conducted as targeted projects and programs of limited duration, thereby ensuring focus and nurturing an impact-driven culture. Projects are led by senior, experienced researchers, and the teams include both junior researchers and students. Each project team is committed to delivering both academic and technological outcomes.





- > Utilizing predictive modelling for diagnosis, prognosis and treatment, drug discovery and development, and issues related to clinical study challenges (e.g. placebo effect, dropouts, remote digital study design, and federated learning)
- > Efforts are directed towards personalized medicine, mobile health, digital markers, activity and behavioral analysis, medical image understanding, and real world evidence (e.g. electronic medical records)

Business - Finance and Marketing

- > Application domains are in fintech, targeted advertising, pricing, business analytics, decisionmaking, risk management, customer relations, next best offer, upselling and cross-selling
- > Relevant paradigms are stochastic models, Natural Language Processing (NLP), recommender systems, Social Network Analysis (SNA), influence detection and prescriptive analytics (e.g. leaders/followers, seeding)

Al and Cognitive Computing

- > Designing algorithms to capture and model the interactions between emotion, cognition, and behavior
- > Applications range from conversational AI to gesture and emotion recognition to personalized Al-based professional services (e.g. private teacher) and AI-led interaction (e.g. an interactive virtual interview in which a machine is leading the interaction)

ESTABLISHED FOCUS AREAS (VERTICALS)



secured, privacy-preserving, distributed computing (e.g.







ACTIVITIES

- > Study/project: up to 1 academic year
- > Premium project: a multi-year effort, up to 3 years
- > Program: a set of projects covering a specific sub-domain

Sponsoring organizations are invited to actively participate in research and development, thus strengthening academicbusiness collaboration and enabling smooth technology and knowledge transfer.

The various Verticals hold yearly events, open to the public, where the joint teams present their ongoing work, achievements, and future plans.

This structure and modus operandi are designed to provide agility and sustainability, and to nurture knowledge creation without compromising on academic depth and rigor.



A multi-disciplinary team effort for a limited duration with impact-driven objectives and tangible deliverables



Diamond Strategic Level

- > Multi-year support of the institute
- > Impact on the institute's strategic plan
- > Membership on the institute's advisory board

Platinum Affiliation Level

> Multi-year support of a specific Vertical > Direct access to the Vertical leads, impact on R&D plans > Membership on the institute's advisory board



SPONSORSHIP

Gold Program/Premium Project Level

- > Support of a multi-year, targeted effort, either in the form of a program (a cluster of activities), or a single major project
- > Direct access to the program/project leads, impact on R&D plans





- > Support of a short-term (up to 1 year) activity/project
- > Participation in the Verticals yearly retreat

> Access to the activity lead, including active participation

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