

illinois tech master of data science

illinois tech master of data science is a distinguished graduate program designed to equip students with advanced skills in data analysis, machine learning, and statistical modeling. This comprehensive degree integrates theoretical foundations with practical applications, preparing graduates to tackle complex data-driven challenges in various industries. Illinois Institute of Technology offers a curriculum that emphasizes both technical proficiency and strategic decision-making, making it an attractive option for aspiring data scientists. The program also provides opportunities for interdisciplinary collaboration, research, and professional development. This article explores the key features, curriculum, career prospects, admission requirements, and unique advantages of the Illinois Tech Master of Data Science program. Readers will gain a thorough understanding of what to expect and how this degree can advance their professional goals.

- Program Overview
- Curriculum and Coursework
- Admission Requirements
- Career Opportunities and Outcomes
- Unique Features and Benefits

Program Overview

The Illinois Tech Master of Data Science program is designed to provide students with a robust education in data science methodologies, tools, and technologies. It combines computer science, statistics, and domain-specific knowledge to train students in extracting insights from large and complex datasets. The program is suitable for students from diverse backgrounds, including computer science, engineering, mathematics, and business. It aims to prepare graduates to work effectively in industries such as healthcare, finance, technology, and government.

Program Format and Duration

The Master of Data Science at Illinois Tech is offered in both full-time and part-time formats, accommodating working professionals and traditional students alike. Typically, the program can be completed within 16 to 24 months, depending on the student's pace and course load. The curriculum includes core courses, electives, and a capstone project or thesis, allowing students to apply their learning to real-world problems.

Faculty Expertise

Illinois Tech boasts a faculty team with extensive expertise in data science, machine learning,

artificial intelligence, and analytics. Professors bring practical industry experience combined with academic research, ensuring that students receive both theoretical knowledge and applied skills. Faculty members often collaborate on interdisciplinary projects, enhancing the learning experience for students.

Curriculum and Coursework

The curriculum of the Illinois Tech Master of Data Science program is carefully structured to cover foundational concepts as well as specialized topics in data science. It integrates programming, statistics, data management, and machine learning in a cohesive manner to build a comprehensive skill set.

Core Courses

Core courses focus on fundamental areas necessary for proficiency in data science, including:

- Data Structures and Algorithms
- Probability and Statistical Inference
- Machine Learning and Predictive Analytics
- Big Data Technologies and Cloud Computing
- Data Visualization and Communication

Electives and Specializations

Students can choose from a variety of electives to tailor their education to specific interests or industry needs. Electives may include topics such as:

- Natural Language Processing
- Deep Learning
- Database Systems and Data Mining
- Business Intelligence
- Computer Vision

Capstone Project and Research Opportunities

The program culminates in a capstone project or thesis that requires students to solve real-world data science problems, often in partnership with industry or research organizations. This practical experience is invaluable for developing problem-solving skills and building a professional portfolio.

Admission Requirements

Admission to the Illinois Tech Master of Data Science program is competitive and based on a holistic review of the applicant's academic background, professional experience, and potential for success in the program.

Academic Prerequisites

Applicants are generally expected to have a bachelor's degree in a related field such as computer science, mathematics, engineering, or physical sciences. Adequate preparation in calculus, linear algebra, and programming is essential.

Application Materials

The application process typically requires the following materials:

- Official transcripts from all postsecondary institutions attended
- Letters of recommendation
- Statement of purpose outlining career goals and interest in data science
- Resume or curriculum vitae
- GRE scores (may be optional depending on the applicant's background)

Additional Considerations

Professional experience in data-related fields can strengthen an application. Illinois Tech also values diversity and encourages applicants from varied backgrounds to apply.

Career Opportunities and Outcomes

Graduates of the Illinois Tech Master of Data Science program are well-prepared for a wide range of careers in the data science domain. The program's emphasis on practical skills and industry-relevant knowledge enhances employability and advancement potential.

Job Roles

Alumni often secure positions such as:

- Data Scientist
- Machine Learning Engineer
- Data Analyst
- Business Intelligence Analyst
- Data Engineer

Industry Sectors

Illinois Tech graduates find opportunities across various sectors, including:

- Technology and Software Development
- Healthcare and Biotechnology
- Financial Services and Banking
- Manufacturing and Supply Chain
- Government and Public Policy

Career Support Services

The university provides career counseling, networking events, and internship placements to assist students in transitioning from the program to the workforce. Partnerships with local and national companies facilitate job placement and professional growth.

Unique Features and Benefits

The Illinois Tech Master of Data Science program offers several distinctive advantages that make it a compelling choice for prospective students.

Interdisciplinary Approach

The program integrates knowledge from computer science, statistics, and domain-specific fields,

encouraging students to approach data science problems from multiple perspectives. This interdisciplinary training prepares graduates for versatile roles.

State-of-the-Art Facilities

Students have access to advanced computing resources, laboratories, and software tools essential for data science research and application. Illinois Tech's commitment to innovation supports cutting-edge learning experiences.

Flexible Learning Options

With options for online, evening, and part-time classes, the program accommodates diverse student needs, including working professionals seeking to advance their education without disrupting their careers.

Strong Industry Connections

Illinois Tech maintains relationships with leading companies and organizations in Chicago and beyond, facilitating internships, collaborative projects, and employment opportunities for students.

Frequently Asked Questions

What is the Illinois Tech Master of Data Science program?

The Illinois Tech Master of Data Science program is a graduate degree designed to equip students with advanced skills in data analysis, machine learning, and big data technologies to prepare them for careers in data science and analytics.

What are the admission requirements for the Illinois Tech Master of Data Science?

Admission requirements typically include a bachelor's degree in a related field, a strong academic record, GRE scores (optional for some applicants), letters of recommendation, a statement of purpose, and relevant work or research experience.

Is the Illinois Tech Master of Data Science program available online?

Yes, Illinois Tech offers an online option for their Master of Data Science program, providing flexibility for working professionals and remote learners.

What courses are included in the Illinois Tech Master of Data Science curriculum?

The curriculum includes courses in machine learning, statistical methods, data mining, big data technologies, data visualization, and programming languages such as Python and R.

What career opportunities can graduates of the Illinois Tech Master of Data Science expect?

Graduates can pursue roles such as data scientist, data analyst, machine learning engineer, business intelligence analyst, and data engineer across various industries including technology, finance, healthcare, and government.

Does Illinois Tech offer any internship or experiential learning opportunities in the Master of Data Science program?

Yes, Illinois Tech encourages internships and offers experiential learning opportunities through industry partnerships and projects to provide real-world experience.

How long does it take to complete the Illinois Tech Master of Data Science degree?

The program can typically be completed in 1.5 to 2 years of full-time study, with part-time options available that extend the duration.

Are there any scholarships or financial aid options for the Illinois Tech Master of Data Science program?

Illinois Tech offers various scholarships, assistantships, and financial aid options for qualified Master of Data Science students to help offset tuition costs.

Additional Resources

1. Data Science for Engineers: Foundations and Applications

This book provides a comprehensive introduction to data science principles tailored for engineering students. It covers core concepts such as data manipulation, statistical analysis, and machine learning with a focus on practical applications in technology fields. Illinois Tech Master of Data Science students will find the engineering context especially relevant for their coursework and projects.

2. Applied Machine Learning with Python and R

Focusing on hands-on machine learning techniques, this book guides readers through real-world data problems using Python and R programming languages. It includes case studies and exercises that align with the Illinois Tech MDS curriculum, emphasizing model building, evaluation, and deployment. The book is ideal for students looking to strengthen their coding and algorithmic skills.

3. Big Data Analytics: Tools and Techniques

This title explores the landscape of big data technologies and analytic methodologies essential for managing large datasets. It covers platforms like Hadoop and Spark, data storage solutions, and scalable machine learning algorithms. MDS students at Illinois Tech will benefit from its practical approach to handling big data challenges in industry.

4. Statistical Methods for Data Science

A detailed guide on statistical concepts and methods used in data science, this book bridges theory and application. Topics include probability distributions, hypothesis testing, regression, and Bayesian inference, all crucial for the Illinois Tech MDS program. It is designed to build a strong statistical foundation for data analysis.

5. Data Visualization: Principles and Practice

This book emphasizes the importance of effective data visualization in communicating insights. It covers visualization tools and libraries, design principles, and interactive dashboards. Illinois Tech students will find practical guidance on how to present data clearly and compellingly for various audiences.

6. Deep Learning: Algorithms and Applications

An in-depth resource on deep learning techniques, this book explains neural networks, convolutional networks, and recurrent models. It includes practical implementations and case studies relevant to natural language processing, computer vision, and more. The content is well suited for Illinois Tech MDS students aiming to specialize in advanced AI.

7. Data Engineering for Data Scientists

This book focuses on the engineering aspects of data science, including data pipelines, ETL processes, and database management. It teaches how to design and optimize workflows that ensure data quality and accessibility. Illinois Tech MDS students will gain valuable skills to bridge the gap between data engineering and analysis.

8. Ethics and Privacy in Data Science

Addressing the critical issues of ethics, privacy, and bias in data science, this book explores legal frameworks and responsible data practices. It encourages students to consider the societal impacts of data-driven decisions. The content aligns with Illinois Tech's emphasis on ethical considerations in technology.

9. Predictive Analytics: Techniques and Applications

This book covers predictive modeling methods, including regression, classification, and time series forecasting. It provides practical examples and case studies to illustrate how predictive analytics drives decision-making in various sectors. Illinois Tech MDS students will find it useful for developing robust analytic solutions.

Illinois Tech Master Of Data Science

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illinois tech master of data science: Data Science Careers, Training, and Hiring Renata Rawlings-Goss, 2019-08-02 This book is an information packed overview of how to structure a data science career, a data science degree program, and how to hire a data science team, including resources and insights from the authors experience with national and international large-scale data projects as well as industry, academic and government partnerships, education, and workforce. Outlined here are tips and insights into navigating the data ecosystem as it currently stands, including career skills, current training programs, as well as practical hiring help and resources. Also, threaded through the book is the outline of a data ecosystem, as it could ultimately emerge, and how career seekers, training programs, and hiring managers can steer their careers, degree programs, and organizations to align with the broader future of data science. Instead of riding the current wave, the author ultimately seeks to help professionals, programs, and organizations alike prepare a sustainable plan for growth in this ever-changing world of data. The book is divided into three sections, the first “Building Data Careers”, is from the perspective of a potential career seeker interested in a career in data, the second “Building Data Programs” is from the perspective of a newly forming data science degree or training program, and the third “Building Data Talent and Workforce” is from the perspective of a Data and Analytics Hiring Manager. Each is a detailed introduction to the topic with practical steps and professional recommendations. The reason for presenting the book from different points of view is that, in the fast-paced data landscape, it is helpful to each group to more thoroughly understand the desires and challenges of the other. It will, for example, help the career seekers to understand best practices for hiring managers to better position themselves for jobs. It will be invaluable for data training programs to gain the perspective of career seekers, who they want to help and attract as students. Also, hiring managers will not only need data talent to hire, but workforce pipelines that can only come from partnerships with universities, data training programs, and educational experts. The interplay gives a broader perspective from which to build.

illinois tech master of data science: Recent Advances in Information Systems and Technologies Álvaro Rocha, Ana Maria Correia, Hojjat Adeli, Luís Paulo Reis, Sandra Costanzo, 2017-03-28 This book presents a selection of papers from the 2017 World Conference on Information Systems and Technologies (WorldCIST'17), held between the 11st and 13th of April 2017 at Porto Santo Island, Madeira, Portugal. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and challenges involved in modern Information Systems and Technologies research, together with technological developments and applications. The main topics covered are: Information and Knowledge Management; Organizational Models and Information Systems; Software and Systems Modeling; Software Systems, Architectures, Applications and Tools; Multimedia Systems and Applications; Computer Networks, Mobility and Pervasive Systems; Intelligent and Decision Support Systems; Big Data Analytics and Applications; Human-Computer Interaction; Ethics, Computers & Security; Health Informatics; Information Technologies in Education; and Information Technologies in Radiocommunications.

illinois tech master of data science: A Friendly Guide to Data Science Kelly P. Vincent, 2025-06-26 Unlock the world of data science—no coding required. Curious about data science but not sure where to start? This book is a beginner-friendly guide to what data science is and how people use it. It walks you through the essential topics—what data analysis involves, which skills are useful, and how terms like “data analytics” and “machine learning” connect—without getting too technical too fast. Data science isn’t just about crunching numbers, pulling data from a database, or running fancy algorithms. It’s about asking the right questions, understanding the process from start to finish, and knowing what’s possible (and what’s not). This book teaches you all of that, while also introducing important topics like ethics, privacy, and security—because working with data means thinking about people, too. Whether you're a student exploring new skills, a professional navigating data-driven decisions, or someone considering a career change, this book is your friendly gateway

into the world of data science, one of today's most exciting fields. No coding or programming experience? No problem. You'll build a solid foundation and gain the confidence to engage with data science concepts— just as AI and data become increasingly central to everyday life. What You Will Learn Grasp foundational statistics and how it matters in data analysis and data science Understand the data science project life cycle and how to manage a data science project Examine the ethics of working with data and its use in data analysis and data science Understand the foundations of data security and privacy Collect, store, prepare, visualize, and present data Identify the many types of machine learning and know how to gauge performance Prepare for and find a career in data science Who This Book is for A wide range of readers who are curious about data science and eager to build a strong foundation. Perfect for undergraduates in the early semesters of their data science degrees, as it assumes no prior programming or industry experience. Professionals will find particular value in the real-world insights shared through practitioner interviews. Business leaders can use it to better understand what data science can do for them and how their teams are applying it. And for career changers, this book offers a welcoming entry point into the field—helping them explore the landscape before committing to more intensive learning paths like degrees or boot camps.

illinois tech master of data science: Big Data Is Not a Monolith Cassidy R. Sugimoto, Hamid R. Ekbia, Michael Mattioli, 2016-10-21 Perspectives on the varied challenges posed by big data for health, science, law, commerce, and politics. Big data is ubiquitous but heterogeneous. Big data can be used to tally clicks and traffic on web pages, find patterns in stock trades, track consumer preferences, identify linguistic correlations in large corpuses of texts. This book examines big data not as an undifferentiated whole but contextually, investigating the varied challenges posed by big data for health, science, law, commerce, and politics. Taken together, the chapters reveal a complex set of problems, practices, and policies. The advent of big data methodologies has challenged the theory-driven approach to scientific knowledge in favor of a data-driven one. Social media platforms and self-tracking tools change the way we see ourselves and others. The collection of data by corporations and government threatens privacy while promoting transparency. Meanwhile, politicians, policy makers, and ethicists are ill-prepared to deal with big data's ramifications. The contributors look at big data's effect on individuals as it exerts social control through monitoring, mining, and manipulation; big data and society, examining both its empowering and its constraining effects; big data and science, considering issues of data governance, provenance, reuse, and trust; and big data and organizations, discussing data responsibility, "data harm," and decision making. Contributors Ryan Abbott, Cristina Alaimo, Kent R. Anderson, Mark Andrejevic, Diane E. Bailey, Mike Bailey, Mark Burdon, Fred H. Cate, Jorge L. Contreras, Simon DeDeo, Hamid R. Ekbia, Allison Goodwell, Jannis Kallinikos, Inna Kouper, M. Lynne Markus, Michael Mattioli, Paul Ohm, Scott Peppet, Beth Plale, Jason Portenoy, Julie Rennecker, Katie Shilton, Dan Sholler, Cassidy R. Sugimoto, Isuru Suriarachchi, Jevin D. West

illinois tech master of data science: Analytics and Knowledge Management Suliman Hawamdeh, Hsia-Ching Chang, 2018-08-06 The process of transforming data into actionable knowledge is a complex process that requires the use of powerful machines and advanced analytics technique. Analytics and Knowledge Management examines the role of analytics in knowledge management and the integration of big data theories, methods, and techniques into an organizational knowledge management framework. Its chapters written by researchers and professionals provide insight into theories, models, techniques, and applications with case studies examining the use of analytics in organizations. The process of transforming data into actionable knowledge is a complex process that requires the use of powerful machines and advanced analytics techniques. Analytics, on the other hand, is the examination, interpretation, and discovery of meaningful patterns, trends, and knowledge from data and textual information. It provides the basis for knowledge discovery and completes the cycle in which knowledge management and knowledge utilization happen. Organizations should develop knowledge focuses on data quality, application domain, selecting analytics techniques, and on how to take actions based on patterns and insights derived from analytics. Case studies in the book explore how to perform analytics on social

networking and user-based data to develop knowledge. One case explores analyze data from Twitter feeds. Another examines the analysis of data obtained through user feedback. One chapter introduces the definitions and processes of social media analytics from different perspectives as well as focuses on techniques and tools used for social media analytics. Data visualization has a critical role in the advancement of modern data analytics, particularly in the field of business intelligence and analytics. It can guide managers in understanding market trends and customer purchasing patterns over time. The book illustrates various data visualization tools that can support answering different types of business questions to improve profits and customer relationships. This insightful reference concludes with a chapter on the critical issue of cybersecurity. It examines the process of collecting and organizing data as well as reviewing various tools for text analysis and data analytics and discusses dealing with collections of large datasets and a great deal of diverse data types from legacy system to social networks platforms.

illinois tech master of data science: *FUTURE OF INTELLIGENCE: Integrating Big Data, AI, ML, and Generative AI for Business Transformation* Venkata Nagesh Boddapati, Vishwanadham Mandala, Gagan Kumar Patra, Fnu Samaah,

illinois tech master of data science: *Big Data Analytics: From Data to Discovery* Dr.K.Varada Rajkumar, Vikram Pasupuleti, Bharadwaj Thuraka, Dr.Saiteja Malisetty, Chandra Shikhi Kodete, 2024-07-13 Dr.K.Varada Rajkumar, Associate Professor, Department of Computer Science and Engineering (AIML), MLR Institute of Technology, Hyderabad, Telangana, India. Vikram Pasupuleti, Software Developer, MS in Computer Technology, School of Technology, Eastern Illinois University, Charleston, Illinois, USA. Bharadwaj Thuraka, Software Developer, Master of Science, Information Systems, Northwest Missouri State University, Maryville, Missouri, USA. Dr.Saiteja Malisetty, Ph.D in Computing & Information Science, College of Information Science and Technology, University of Nebraska, Omaha, Nebraska, USA. Chandra Shikhi Kodete, Software Engineer, MS in Computer Technology, School of Technology, Eastern Illinois University, Charleston, Illinois, USA.

illinois tech master of data science: *Data Analytics for Intelligent Transportation Systems* Mashrur Chowdhury, Amy Apon, Kakan Dey, 2017-04-05 Data Analytics for Intelligent Transportation Systems provides in-depth coverage of data-enabled methods for analyzing intelligent transportation systems that includes detailed coverage of the tools needed to implement these methods using big data analytics and other computing techniques. The book examines the major characteristics of connected transportation systems, along with the fundamental concepts of how to analyze the data they produce. It explores collecting, archiving, processing, and distributing the data, designing data infrastructures, data management and delivery systems, and the required hardware and software technologies. Users will learn how to design effective data visualizations, tactics on the planning process, and how to evaluate alternative data analytics for different connected transportation applications, along with key safety and environmental applications for both commercial and passenger vehicles, data privacy and security issues, and the role of social media data in traffic planning. - Includes case studies in each chapter that illustrate the application of concepts covered - Presents extensive coverage of existing and forthcoming intelligent transportation systems and data analytics technologies - Contains contributors from both leading academic and commercial researchers - Explains how to design effective data visualizations, tactics on the planning process, and how to evaluate alternative data analytics for different connected transportation applications

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illinois tech master of data science: *Data Scientist Diploma (master's level) - City of London College of Economics - 6 months - 100% online / self-paced* City of London College of Economics, Overview This diploma course covers all aspects you need to know to become a successful Data Scientist. Content - Getting Started with Data Science - Data Analytic Thinking - Business Problems and Data Science Solutions - Introduction to Predictive Modeling: From

Correlation to Supervised Segmentation - Fitting a Model to Data - Overfitting and Its Avoidance - Similarity, Neighbors, and Clusters Decision Analytic Thinking I: What Is a Good Model? - Visualizing Model Performance - Evidence and Probabilities - Representing and Mining Text - Decision Analytic Thinking II: Toward Analytical Engineering - Other Data Science Tasks and Techniques - Data Science and Business Strategy - Machine Learning: Learning from Data with Your Machine. - And much more Duration 6 months Assessment The assessment will take place on the basis of one assignment at the end of the course. Tell us when you feel ready to take the exam and we'll send you the assignment questions. Study material The study material will be provided in separate files by email / download link.

illinois tech master of data science: Encyclopedia of Data Science and Machine

Learning Wang, John, 2023-01-20 Big data and machine learning are driving the Fourth Industrial Revolution. With the age of big data upon us, we risk drowning in a flood of digital data. Big data has now become a critical part of both the business world and daily life, as the synthesis and synergy of machine learning and big data has enormous potential. Big data and machine learning are projected to not only maximize citizen wealth, but also promote societal health. As big data continues to evolve and the demand for professionals in the field increases, access to the most current information about the concepts, issues, trends, and technologies in this interdisciplinary area is needed. The Encyclopedia of Data Science and Machine Learning examines current, state-of-the-art research in the areas of data science, machine learning, data mining, and more. It provides an international forum for experts within these fields to advance the knowledge and practice in all facets of big data and machine learning, emphasizing emerging theories, principals, models, processes, and applications to inspire and circulate innovative findings into research, business, and communities. Covering topics such as benefit management, recommendation system analysis, and global software development, this expansive reference provides a dynamic resource for data scientists, data analysts, computer scientists, technical managers, corporate executives, students and educators of higher education, government officials, researchers, and academicians.

illinois tech master of data science: Teaching Data Analytics Susan Vowels, Katherine

Leaming Goldberg, 2019-06-17 The need for analytics skills is a source of the burgeoning growth in the number of analytics and decision science programs in higher education developed to feed the need for capable employees in this area. The very size and continuing growth of this need means that there is still space for new program development. Schools wishing to pursue business analytics programs intentionally assess the maturity level of their programs and take steps to close the gap. Teaching Data Analytics: Pedagogy and Program Design is a reference for faculty and administrators seeking direction about adding or enhancing analytics offerings at their institutions. It provides guidance by examining best practices from the perspectives of faculty and practitioners. By emphasizing the connection of data analytics to organizational success, it reviews the position of analytics and decision science programs in higher education, and to review the critical connection between this area of study and career opportunities. The book features: A variety of perspectives ranging from the scholarly theoretical to the practitioner applied An in-depth look into a wide breadth of skills from closely technology-focused to robustly soft human connection skills Resources for existing faculty to acquire and maintain additional analytics-relevant skills that can enrich their current course offerings. Acknowledging the dichotomy between data analytics and data science, this book emphasizes data analytics rather than data science, although the book does touch upon the data science realm. Starting with industry perspectives, the book covers the applied world of data analytics, covering necessary skills and applications, as well as developing compelling visualizations. It then dives into pedagogical and program design approaches in data analytics education and concludes with ideas for program design tactics. This reference is a launching point for discussions about how to connect industry's need for skilled data analysts to higher education's need to design a rigorous curriculum that promotes student critical thinking, communication, and ethical skills. It also provides insight into adding new elements to existing data analytics courses and for taking the next step in adding data analytics offerings, whether it be incorporating additional analytics

assignments into existing courses, offering one course designed for undergraduates, or an integrated program designed for graduate students.

illinois tech master of data science: Principles and Theories of Data Mining With RapidMiner Ramjan, Sarawut, Sunkpho, Jirapon, 2023-05-09 The demand for skilled data scientists is rapidly increasing as more organizations recognize the value of data-driven decision-making. Data science, data management, and data mining are all critical components for various types of organizations, including large and small corporations, academic institutions, and government entities. For companies, these components serve to extract insights and value from their data, empowering them to make evidence-driven decisions and gain a competitive advantage by discovering patterns and trends and avoiding costly mistakes. Academic institutions utilize these tools to analyze large datasets and gain insights into various scientific fields of study, including genetic data, climate data, financial data, and in the social sciences they are used to analyze survey data, behavioral data, and public opinion data. Governments use data science to analyze data that can inform policy decisions, such as identifying areas with high crime rates, determining which regions need infrastructure development, and predicting disease outbreaks. However, individuals who are not data science experts, but are experts within their own fields, may need to apply their experience to the data they must manage, but still struggle to expand their knowledge of how to use data mining tools such as RapidMiner software. **Principles and Theories of Data Mining With RapidMiner** is a comprehensive guide for students and individuals interested in experimenting with data mining using RapidMiner software. This book takes a practical approach to learning through the RapidMiner tool, with exercises and case studies that demonstrate how to apply data mining techniques to real-world scenarios. Readers will learn essential concepts related to data mining, such as supervised learning, unsupervised learning, association rule mining, categorical data, continuous data, and data quality. Additionally, readers will learn how to apply data mining techniques to popular algorithms, including k-nearest neighbor (K-NN), decision tree, naïve bayes, artificial neural network (ANN), k-means clustering, and probabilistic methods. By the end of the book, readers will have the skills and confidence to use RapidMiner software effectively and efficiently, making it an ideal resource for anyone, whether a student or a professional, who needs to expand their knowledge of data mining with RapidMiner software.

illinois tech master of data science: Development of Employability Skills Through Pragmatic Assessment of Student Learning Outcomes Subudhi, Bidyadhar, Sinha, G.R., 2022-06-24 The COVID-19 pandemic has shifted the teaching-learning experience dramatically, creating an opportunity for new online and blended learning techniques and tools. This has also added a new dimension to practices and methods already adopted for achieving sustainable development goals (SDGs) within education. This requires a new paradigm shift in the teaching-learning process through the systemic and pragmatic assessment of student learning outcomes so that employability skills and competence can be developed in students for competing at the global level. **Development of Employability Skills Through Pragmatic Assessment of Student Learning Outcomes** discusses the best practices in the assessment of student learning objectives (SLOs), the mapping of SLOs, and the ways of developing employability skills in young minds so that SDGs may be achieved. It elaborates the theory, practice, and importance of developing employability skills through research-based learning. Covering topics such as graduate employability, outcome-based education, and technical undergraduate programs, this premier reference source is an essential resource for employers, libraries, students and educators of higher education, faculty and administration of higher education, pre-service teachers, government organizations, business leaders and managers, human resource managers, researchers, and academicians.

illinois tech master of data science: Masters Theses in the Pure and Applied Sciences W. H. Shafer, 2012-12-06 *Masters Theses in the Pure and Applied Sciences* was first conceived, published, and disseminated by the Center for Information and Numerical Data Analysis and Synthesis (CINDAS) * at Purdue University in 1957, starting its coverage of theses with the academic year

1955. Beginning with Volume 13, the printing and dissemination phases of the activity were transferred to University Microfilms/Xerox of Ann Arbor, Michigan, with the thought that such an arrangement would be more beneficial to the academic and general scientific and technical community. After five years of this joint undertaking we had concluded that it was in the interest of all concerned if the printing and distribution of the volume were handled by an international publishing house to assure improved service and broader dissemination. Hence, starting with Volume 18, Masters Theses in the Pure and Applied Sciences has been disseminated on a worldwide basis by Plenum Publishing Corporation of New York, and in the same year the coverage was broadened to include Canadian universities. All back issues can also be ordered from Plenum. We have reported in Volume 25 (thesis year 1980) a total of 10,308 theses titles from 27 Canadian and 214 United States universities. We are sure that this broader base for theses titles reported will greatly enhance the value of this important annual reference work. While Volume 25 reports theses submitted in 1980, on occasion, certain universities do report theses submitted in previous years but not reported at the time.

illinois tech master of data science: *The Deep Learning Architect's Handbook* Ee Kin Chin, 2023-12-29 Harness the power of deep learning to drive productivity and efficiency using this practical guide covering techniques and best practices for the entire deep learning life cycle Key Features Interpret your models' decision-making process, ensuring transparency and trust in your AI-powered solutions Gain hands-on experience in every step of the deep learning life cycle Explore case studies and solutions for deploying DL models while addressing scalability, data drift, and ethical considerations Purchase of the print or Kindle book includes a free PDF eBook Book Description Deep learning enables previously unattainable feats in automation, but extracting real-world business value from it is a daunting task. This book will teach you how to build complex deep learning models and gain intuition for structuring your data to accomplish your deep learning objectives. This deep learning book explores every aspect of the deep learning life cycle, from planning and data preparation to model deployment and governance, using real-world scenarios that will take you through creating, deploying, and managing advanced solutions. You'll also learn how to work with image, audio, text, and video data using deep learning architectures, as well as optimize and evaluate your deep learning models objectively to address issues such as bias, fairness, adversarial attacks, and model transparency. As you progress, you'll harness the power of AI platforms to streamline the deep learning life cycle and leverage Python libraries and frameworks such as PyTorch, ONNX, Catalyst, MLFlow, Captum, Nvidia Triton, Prometheus, and Grafana to execute efficient deep learning architectures, optimize model performance, and streamline the deployment processes. You'll also discover the transformative potential of large language models (LLMs) for a wide array of applications. By the end of this book, you'll have mastered deep learning techniques to unlock its full potential for your endeavors. What you will learn Use neural architecture search (NAS) to automate the design of artificial neural networks (ANNs) Implement recurrent neural networks (RNNs), convolutional neural networks (CNNs), BERT, transformers, and more to build your model Deal with multi-modal data drift in a production environment Evaluate the quality and bias of your models Explore techniques to protect your model from adversarial attacks Get to grips with deploying a model with DataRobot AutoML Who this book is for This book is for deep learning practitioners, data scientists, and machine learning developers who want to explore deep learning architectures to solve complex business problems. Professionals in the broader deep learning and AI space will also benefit from the insights provided, applicable across a variety of business use cases. Working knowledge of Python programming and a basic understanding of deep learning techniques is needed to get started with this book.

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Wade H. Shafer, 2013-11-21 *Masters Theses in the Pure and Applied Sciences* was first conceived, published, and disseminated by the Center for Information and Numerical Data Analysis and Synthesis (C/NDAS) * at Purdue University in 1957, starting its coverage of theses with the academic year 1955. Beginning with Volume 13, the printing and dissemination phases of the activity were transferred to University Microfilms/Xerox of Ann Arbor, Michigan, with the thought that such an arrangement would be more beneficial to the academic and general scientific and technical community. After five years of this joint undertaking we had concluded that it was in the interest of all concerned if the printing and distribution of the volume were handled by an international publishing house to assure improved service and broader dissemination. Hence, starting with Volume 18, *Masters Theses in the Pure and Applied Sciences* has been disseminated on a worldwide basis by Plenum Publishing Corporation of New York, and in the same year the coverage was broadened to include Canadian universities. All back issues can also be ordered from Plenum. We have reported in Volume 21 (thesis year 1976) a total of 10,586 theses titles from 25 Canadian and 219 United States universities. We are sure that this broader base for theses titles reported will greatly enhance the value of this important annual reference work.

illinois tech master of data science: Roundtable on Data Science Postsecondary Education

National Academies of Sciences, Engineering, and Medicine, Division of Behavioral and Social Sciences and Education, Division on Engineering and Physical Sciences, Board on Science Education, Computer Science and Telecommunications Board, Committee on Applied and Theoretical Statistics, Board on Mathematical Sciences and Analytics, 2020-10-02 Established in December 2016, the National Academies of Sciences, Engineering, and Medicine's Roundtable on Data Science Postsecondary Education was charged with identifying the challenges of and highlighting best practices in postsecondary data science education. Convening quarterly for 3 years, representatives from academia, industry, and government gathered with other experts from across the nation to discuss various topics under this charge. The meetings centered on four central themes: foundations of data science; data science across the postsecondary curriculum; data science across society; and ethics and data science. This publication highlights the presentations and discussions of each meeting.

illinois tech master of data science: Data Science for Undergraduates

National Academies of Sciences, Engineering, and Medicine, Division of Behavioral and Social Sciences and Education, Board on Science Education, Division on Engineering and Physical Sciences, Committee on Applied and Theoretical Statistics, Board on Mathematical Sciences and Analytics, Computer Science and Telecommunications Board, Committee on Envisioning the Data Science Discipline: The Undergraduate Perspective, 2018-11-11 Data science is emerging as a field that is revolutionizing science and industries alike. Work across nearly all domains is becoming more data driven, affecting both the jobs that are available and the skills that are required. As more data and ways of analyzing them become available, more aspects of the economy, society, and daily life will become dependent on data. It is imperative that educators, administrators, and students begin today to consider how to best prepare for and keep pace with this data-driven era of tomorrow. Undergraduate teaching, in particular, offers a critical link in offering more data science exposure to students and expanding the supply of data science talent. *Data Science for Undergraduates: Opportunities and Options* offers a

vision for the emerging discipline of data science at the undergraduate level. This report outlines some considerations and approaches for academic institutions and others in the broader data science communities to help guide the ongoing transformation of this field.

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