

SHOULD I MAJOR IN DATA SCIENCE OR COMPUTER SCIENCE

****Should I Major in Data Science or Computer Science? Navigating Your Tech Education Path****

Should I Major in Data Science or Computer Science is a question many aspiring tech enthusiasts face today. With the rapid growth of technology and the increasing demand for skilled professionals, choosing the right major can feel overwhelming. Both data science and computer science offer exciting career opportunities, but they cater to different interests, skill sets, and career aspirations. If you're standing at this crossroads, understanding the nuances between these fields will help you make an informed decision.

UNDERSTANDING THE BASICS: WHAT ARE DATA SCIENCE AND COMPUTER SCIENCE?

Before diving into which major suits you better, it's essential to clarify what data science and computer science entail.

WHAT IS COMPUTER SCIENCE?

Computer science is the study of computers and computational systems. It covers a broad range of topics including algorithms, software development, programming languages, systems architecture, artificial intelligence, and cybersecurity. If you enjoy problem-solving, designing software, and understanding how machines process information, computer science might be your calling.

WHAT IS DATA SCIENCE?

Data science, on the other hand, revolves around extracting meaningful insights from large volumes of data. It combines statistics, mathematics, programming, and domain knowledge to analyze and interpret complex datasets. If you're curious about uncovering patterns, making data-driven decisions, and working with tools like machine learning and predictive analytics, data science could be the right fit.

SHOULD I MAJOR IN DATA SCIENCE OR COMPUTER SCIENCE? KEY DIFFERENCES TO CONSIDER

When weighing the two fields, there are several factors that can guide your decision.

CURRICULUM FOCUS

- ****Computer Science:**** Emphasizes programming, software engineering, computer architecture, operating systems, and theory of computation.
- ****Data Science:**** Focuses on statistics, data analysis, machine learning, data visualization, and database management.

If you prefer coding and building software from scratch, computer science will offer a more comprehensive foundation. However, if you are drawn to working with data sets and applying statistical models, data science programs will be more aligned with your interests.

Skill Sets You'll Develop

BOTH MAJORS REQUIRE STRONG ANALYTICAL SKILLS, BUT THEY DIFFER IN TECHNICAL EMPHASIS:

- **Computer Science Skills:** Proficiency in programming languages like Java, C++, and Python; understanding algorithms and data structures; knowledge of software development life cycles.
- **Data Science Skills:** Expertise in Python and R for data manipulation; statistical analysis; machine learning techniques; data wrangling and cleansing; familiarity with big data tools like Hadoop or Spark.

Career Paths and Job Roles

YOUR CHOICE OF MAJOR CAN INFLUENCE THE TYPE OF ROLES YOU PURSUE AFTER GRADUATION.

- **Computer Science Careers:** Software developer, systems analyst, cybersecurity expert, AI engineer, mobile app developer.
- **Data Science Careers:** Data analyst, data scientist, business intelligence analyst, machine learning engineer, quantitative analyst.

WHILE THERE IS SOME OVERLAP, COMPUTER SCIENCE CAREERS OFTEN INVOLVE CREATING SOFTWARE AND SYSTEMS, WHEREAS DATA SCIENCE ROLES FOCUS ON INTERPRETING DATA TO INFORM BUSINESS OR RESEARCH DECISIONS.

Factors That Can Help You Decide Between Data Science and Computer Science

CHOOSING YOUR MAJOR IS A PERSONAL DECISION INFLUENCED BY YOUR INTERESTS, STRENGTHS, AND LONG-TERM GOALS. HERE ARE SOME PRACTICAL CONSIDERATIONS.

Passion for Mathematics and Statistics

DATA SCIENCE LEANS HEAVILY ON STATISTICS AND PROBABILITY. IF YOU ENJOY WORKING WITH NUMBERS, ANALYZING TRENDS, AND APPLYING MATHEMATICAL MODELS, DATA SCIENCE MIGHT RESONATE WITH YOU MORE. COMPUTER SCIENCE, WHILE MATHEMATICAL, TENDS TO FOCUS MORE ON LOGIC, ALGORITHMS, AND PROGRAMMING PRINCIPLES.

Interest in Software Development vs. Data Analysis

ASK YOURSELF: DO YOU PREFER WRITING CODE TO BUILD APPLICATIONS AND SYSTEMS, OR DO YOU FIND SATISFACTION IN INTERPRETING DATA TO SOLVE COMPLEX PROBLEMS? YOUR PREFERENCE HERE IS A STRONG INDICATOR OF WHICH MAJOR SUITS YOU BEST.

Learning Style and Curriculum Preference

SOME STUDENTS THRIVE IN STRUCTURED PROGRAMMING CLASSES AND ENJOY UNDERSTANDING COMPUTER HARDWARE AND SOFTWARE INTRICACIES. OTHERS PREFER COURSES THAT INTEGRATE REAL-WORLD DATA PROJECTS, STATISTICAL MODELING, AND VISUALIZATION TECHNIQUES.

IF POSSIBLE, REVIEW SAMPLE SYLLABI FOR BOTH MAJORS, EXPLORE INTRODUCTORY COURSES ONLINE, OR ATTEND INFORMATIONAL SESSIONS TO GET A FEEL FOR EACH DISCIPLINE.

INDUSTRY DEMAND AND JOB MARKET TRENDS

BOTH FIELDS ARE IN DEMAND, BUT THEIR JOB MARKETS VARY BY LOCATION AND INDUSTRY.

- DATA SCIENCE ROLES ARE BOOMING IN SECTORS LIKE HEALTHCARE, FINANCE, MARKETING, AND E-COMMERCE, WHERE DATA-DRIVEN DECISIONS ARE CRUCIAL.
- COMPUTER SCIENCE JOBS ARE ABUNDANT IN SOFTWARE DEVELOPMENT FIRMS, TECH STARTUPS, GAMING COMPANIES, AND ENTERPRISES FOCUSING ON CYBERSECURITY AND AI.

UNDERSTANDING REGIONAL JOB TRENDS AND GROWTH PROJECTIONS CAN HELP YOU ANTICIPATE OPPORTUNITIES AFTER GRADUATION.

OVERLAP AND SYNERGY BETWEEN DATA SCIENCE AND COMPUTER SCIENCE

IT'S WORTH NOTING THAT THESE TWO FIELDS ARE NOT MUTUALLY EXCLUSIVE. IN FACT, THEY COMPLEMENT EACH OTHER IN MANY WAYS.

SHARED FOUNDATIONS

BOTH MAJORS REQUIRE PROGRAMMING SKILLS, ESPECIALLY IN PYTHON, WHICH IS WIDELY USED IN DATA SCIENCE AND COMPUTER SCIENCE ALIKE. KNOWLEDGE OF ALGORITHMS AND DATA STRUCTURES BENEFITS DATA SCIENTISTS WHEN OPTIMIZING DATA PROCESSING TASKS.

INTERDISCIPLINARY OPPORTUNITIES

MANY COMPUTER SCIENCE STUDENTS TAKE ELECTIVES IN DATA ANALYTICS, MACHINE LEARNING, OR ARTIFICIAL INTELLIGENCE, ALLOWING THEM TO TRANSITION INTO DATA SCIENCE ROLES. CONVERSELY, DATA SCIENCE STUDENTS OFTEN LEARN SOFTWARE ENGINEERING PRINCIPLES TO BUILD SCALABLE DATA APPLICATIONS.

GRADUATE STUDIES AND SPECIALIZATIONS

IF YOU'RE UNDECIDED NOW, PURSUING A BACHELOR'S IN COMPUTER SCIENCE AND SPECIALIZING LATER WITH A MASTER'S IN DATA SCIENCE IS A COMMON PATHWAY. THIS APPROACH PROVIDES A ROBUST FOUNDATION AND FLEXIBILITY TO ADAPT TO EVOLVING INDUSTRY DEMANDS.

TIPS FOR MAKING THE DECISION

CHOOSING BETWEEN DATA SCIENCE AND COMPUTER SCIENCE CAN FEEL DAUNTING, BUT SOME STRATEGIES CAN CLARIFY YOUR PATH.

- ****EXPLORE INTRODUCTORY COURSES:**** TAKE BEGINNER CLASSES IN BOTH FIELDS TO GAUGE YOUR INTEREST AND APTITUDE.
- ****ENGAGE IN PROJECTS:**** TRY CODING PROJECTS, DATA ANALYSIS CHALLENGES, OR INTERNSHIPS TO EXPERIENCE REAL-WORLD APPLICATIONS.
- ****SEEK MENTORSHIP:**** TALK TO PROFESSIONALS WORKING IN DATA SCIENCE AND COMPUTER SCIENCE TO UNDERSTAND THEIR DAILY WORK AND CAREER TRAJECTORIES.
- ****CONSIDER YOUR LONG-TERM GOALS:**** THINK ABOUT WHETHER YOU WANT TO BUILD SOFTWARE PRODUCTS OR FOCUS ON INTERPRETING DATA TO DRIVE DECISIONS.

- ****EVALUATE JOB SHADOWING OPPORTUNITIES:**** SPENDING TIME OBSERVING ROLES IN BOTH FIELDS CAN PROVIDE INVALUABLE INSIGHTS.

FINAL THOUGHTS ON SHOULD I MAJOR IN DATA SCIENCE OR COMPUTER SCIENCE

THE DECISION BETWEEN DATA SCIENCE AND COMPUTER SCIENCE ULTIMATELY DEPENDS ON YOUR INTERESTS, STRENGTHS, AND CAREER ASPIRATIONS. BOTH FIELDS PROMISE DYNAMIC AND REWARDING CAREERS IN THE EVER-EXPANDING TECH LANDSCAPE. BY REFLECTING ON WHAT EXCITES YOU—WHETHER IT'S CRAFTING ELEGANT ALGORITHMS OR UNCOVERING INSIGHTS HIDDEN IN DATA—YOU'LL BE BETTER POSITIONED TO CHOOSE A PATH THAT ALIGNS WITH YOUR PASSION AND GOALS.

REMEMBER, THE TECH INDUSTRY IS VAST AND CONTINUOUSLY EVOLVING. MANY PROFESSIONALS FIND THEMSELVES BLENDING SKILLS FROM BOTH DOMAINS THROUGHOUT THEIR CAREERS. SO, WHICHEVER MAJOR YOU CHOOSE, A MINDSET OF LIFELONG LEARNING AND ADAPTABILITY WILL SERVE YOU WELL.

FREQUENTLY ASKED QUESTIONS

WHAT ARE THE MAIN DIFFERENCES BETWEEN A DATA SCIENCE AND A COMPUTER SCIENCE MAJOR?

DATA SCIENCE FOCUSES ON EXTRACTING INSIGHTS FROM DATA USING STATISTICS, MACHINE LEARNING, AND DOMAIN KNOWLEDGE, WHEREAS COMPUTER SCIENCE COVERS A BROADER RANGE OF TOPICS INCLUDING ALGORITHMS, SOFTWARE DEVELOPMENT, AND COMPUTER SYSTEMS.

WHICH MAJOR OFFERS BETTER JOB PROSPECTS, DATA SCIENCE OR COMPUTER SCIENCE?

BOTH MAJORS HAVE STRONG JOB PROSPECTS, BUT COMPUTER SCIENCE TYPICALLY OFFERS A WIDER RANGE OF ROLES IN SOFTWARE DEVELOPMENT, SYSTEMS ENGINEERING, AND MORE, WHILE DATA SCIENCE JOBS ARE SPECIALIZED IN ANALYTICS, MACHINE LEARNING, AND DATA-DRIVEN DECISION MAKING.

DO I NEED STRONG MATH SKILLS FOR DATA SCIENCE COMPARED TO COMPUTER SCIENCE?

DATA SCIENCE GENERALLY REQUIRES STRONGER SKILLS IN STATISTICS, LINEAR ALGEBRA, AND PROBABILITY, WHILE COMPUTER SCIENCE EMPHASIZES DISCRETE MATH, ALGORITHMS, AND LOGIC. HOWEVER, BOTH REQUIRE SOLID MATHEMATICAL FOUNDATIONS.

CAN I SWITCH FROM A COMPUTER SCIENCE MAJOR TO A DATA SCIENCE CAREER EASILY?

YES, SWITCHING IS COMMON SINCE COMPUTER SCIENCE PROVIDES A STRONG FOUNDATION IN PROGRAMMING AND ALGORITHMS, WHICH ARE ESSENTIAL IN DATA SCIENCE. ADDITIONAL LEARNING IN STATISTICS AND MACHINE LEARNING MAY BE NECESSARY.

WHICH MAJOR IS MORE FOCUSED ON PROGRAMMING SKILLS?

COMPUTER SCIENCE IS MORE PROGRAMMING-INTENSIVE, COVERING VARIOUS PROGRAMMING LANGUAGES, SOFTWARE DEVELOPMENT, AND SYSTEM DESIGN, WHEREAS DATA SCIENCE INVOLVES PROGRAMMING BUT WITH A FOCUS ON DATA MANIPULATION AND ANALYSIS TOOLS.

IS DATA SCIENCE A GOOD CHOICE IF I ENJOY WORKING WITH BIG DATA AND ANALYTICS?

YES, DATA SCIENCE IS IDEAL FOR THOSE INTERESTED IN BIG DATA, ANALYTICS, AND APPLYING STATISTICAL METHODS TO SOLVE REAL-WORLD PROBLEMS USING DATA.

How do the coursework and projects differ between Data Science and Computer Science majors?

Data Science coursework typically includes statistics, machine learning, data visualization, and working on projects involving real datasets. Computer Science coursework focuses on algorithms, programming, operating systems, and software engineering projects.

Which major offers higher salary potential early in the career?

Both majors offer competitive salaries, but Computer Science roles may have a broader starting salary range due to diverse opportunities, while Data Science roles can offer high salaries particularly in analytics and AI fields.

Should I consider my long-term career goals when choosing between Data Science and Computer Science?

Absolutely. If you are passionate about software development, system design, or computer theory, Computer Science is suitable. If you prefer working with data, statistics, and predictive modeling, Data Science aligns better with your goals.

Additional Resources

Should I Major in Data Science or Computer Science? An In-Depth Professional Analysis

Should I Major in Data Science or Computer Science is a question increasingly on the minds of prospective students, career changers, and tech enthusiasts alike. Both fields offer promising career opportunities and overlap in skill sets but cater to different professional interests and industry demands. Deciding between these two disciplines requires a nuanced understanding of their core differences, educational paths, and career trajectories. This article delves into the critical aspects of Data Science and Computer Science, providing a balanced, analytical perspective to help you make an informed decision.

Understanding the Foundations: Data Science vs. Computer Science

At its core, Computer Science is a broad field dedicated to the theoretical and practical aspects of computing, algorithms, software development, and systems architecture. It encompasses everything from programming languages and data structures to artificial intelligence and cybersecurity. Data Science, by contrast, is a more specialized discipline focused on extracting insights and value from data. It combines statistics, machine learning, data analysis, and domain-specific knowledge to interpret complex datasets and support data-driven decision-making.

Curriculum and Skill Requirements

When weighing the question, “Should I major in Data Science or Computer Science,” understanding the curriculum differences is essential. Computer Science programs typically emphasize:

- Programming proficiency in languages such as Java, C++, and Python
- Algorithms, data structures, and computational theory
- Operating systems, networking, and databases

- SOFTWARE ENGINEERING METHODOLOGIES
- MATHEMATICS INCLUDING DISCRETE MATH AND LINEAR ALGEBRA

DATA SCIENCE PROGRAMS, MEANWHILE, OFTEN FOCUS ON:

- STATISTICAL ANALYSIS AND PROBABILITY THEORY
- DATA MINING, MACHINE LEARNING, AND ARTIFICIAL INTELLIGENCE
- DATA VISUALIZATION AND COMMUNICATION
- BIG DATA TECHNOLOGIES (HADOOP, SPARK)
- PROGRAMMING IN PYTHON AND R, WITH SQL FOR DATABASE QUERYING

BOTH MAJORS REQUIRE STRONG ANALYTICAL THINKING AND PROGRAMMING SKILLS, BUT DATA SCIENCE LEANS MORE HEAVILY ON MATHEMATICS AND STATISTICS, WHILE COMPUTER SCIENCE OFFERS A BROADER AND DEEPER DIVE INTO COMPUTING FUNDAMENTALS.

CAREER PATHS AND INDUSTRY DEMAND

THE DECISION "SHOULD I MAJOR IN DATA SCIENCE OR COMPUTER SCIENCE" OFTEN HINGES ON ANTICIPATED CAREER OUTCOMES. COMPUTER SCIENCE GRADUATES ENJOY VERSATILE OPPORTUNITIES ACROSS SOFTWARE DEVELOPMENT, SYSTEM ARCHITECTURE, CYBERSECURITY, AND EMERGING FIELDS SUCH AS ARTIFICIAL INTELLIGENCE AND ROBOTICS. ACCORDING TO THE U.S. BUREAU OF LABOR STATISTICS, EMPLOYMENT FOR SOFTWARE DEVELOPERS IS PROJECTED TO GROW 25% FROM 2021 TO 2031, MUCH FASTER THAN AVERAGE, REFLECTING THE HIGH DEMAND FOR COMPUTING EXPERTISE.

DATA SCIENCE CAREERS, MEANWHILE, HAVE SURGED IN POPULARITY DUE TO THE EXPLOSION OF DATA-DRIVEN BUSINESS MODELS. ROLES INCLUDE DATA ANALYST, MACHINE LEARNING ENGINEER, BUSINESS INTELLIGENCE DEVELOPER, AND DATA ENGINEER. THE DEMAND FOR DATA SCIENTISTS IS EXPECTED TO GROW BY 36% OVER THE NEXT DECADE, DRIVEN BY INDUSTRIES SEEKING TO LEVERAGE BIG DATA FOR COMPETITIVE ADVANTAGE.

SALARY AND JOB MARKET CONSIDERATIONS

SALARY EXPECTATIONS ALSO INFLUENCE THE MAJOR CHOICE. BOTH FIELDS OFFER LUCRATIVE COMPENSATION, BUT SPECIFICS VARY BY ROLE AND EXPERIENCE. FOR INSTANCE:

- ENTRY-LEVEL COMPUTER SCIENCE PROFESSIONALS CAN EXPECT SALARIES RANGING FROM \$65,000 TO \$90,000 ANNUALLY.
- DATA SCIENCE ENTRY-LEVEL SALARIES TYPICALLY START SLIGHTLY HIGHER, OFTEN BETWEEN \$70,000 AND \$95,000, REFLECTING THE SPECIALIZED SKILL SET.
- MID-CAREER AND SENIOR ROLES IN BOTH FIELDS CAN COMMAND SIX-FIGURE SALARIES, WITH DATA SCIENTISTS SOMETIMES ENJOYING A PREMIUM DUE TO THEIR NICHE EXPERTISE.

HOWEVER, MARKET VOLATILITY AND INDUSTRY-SPECIFIC DEMAND CAN INFLUENCE THESE FIGURES, SO FLEXIBILITY AND

CONTINUOUS LEARNING REMAIN CRUCIAL.

ACADEMIC AND PERSONAL CONSIDERATIONS

BEYOND JOB PROSPECTS AND CURRICULUM, PERSONAL INTERESTS AND ACADEMIC STRENGTHS SHOULD GUIDE THE DECISION TO MAJOR IN DATA SCIENCE OR COMPUTER SCIENCE. FOR STUDENTS PASSIONATE ABOUT CODING, SOFTWARE DESIGN, AND EXPLORING THE THEORETICAL UNDERPINNINGS OF COMPUTATION, COMPUTER SCIENCE OFFERS A COMPREHENSIVE FOUNDATION THAT CAN OPEN DOORS TO DIVERSE TECH ROLES.

MEANWHILE, THOSE INTRIGUED BY STATISTICS, PREDICTIVE MODELING, AND INTERPRETING DATA TRENDS MAY FIND DATA SCIENCE MORE ALIGNED WITH THEIR STRENGTHS AND CAREER GOALS. IT'S ALSO WORTH NOTING THAT DATA SCIENCE PROGRAMS GENERALLY ASSUME SOME FOUNDATIONAL KNOWLEDGE OF COMPUTER SCIENCE, SO A MINIMAL UNDERSTANDING OF PROGRAMMING IS NECESSARY.

FLEXIBILITY AND INTERDISCIPLINARY OPPORTUNITIES

ANOTHER DIMENSION TO CONSIDER IS THE FLEXIBILITY AND POTENTIAL FOR INTERDISCIPLINARY APPLICATIONS. COMPUTER SCIENCE GRADUATES CAN PIVOT INTO VARIOUS DOMAINS SUCH AS GAME DEVELOPMENT, EMBEDDED SYSTEMS, OR CYBERSECURITY WITH RELATIVE EASE. DATA SCIENCE, BY ITS NATURE, OFTEN INTERSECTS WITH BUSINESS ANALYTICS, HEALTHCARE, FINANCE, AND MARKETING, ENABLING PROFESSIONALS TO APPLY THEIR SKILLS IN MULTIPLE INDUSTRIES.

MOREOVER, MANY UNIVERSITIES NOW OFFER COMBINED OR DUAL-DEGREE PROGRAMS, RECOGNIZING THE COMPLEMENTARY NATURE OF THESE FIELDS. PURSUING MINORS OR ELECTIVES IN DATA SCIENCE WITHIN A COMPUTER SCIENCE DEGREE—OR VICE VERSA—CAN ENHANCE EMPLOYABILITY AND PROVIDE A BROADER SKILL SET.

EMERGING TRENDS AND FUTURE OUTLOOK

THE TECH LANDSCAPE IS EVOLVING RAPIDLY, INFLUENCING THE RELEVANCE AND SCOPE OF BOTH MAJORS. ARTIFICIAL INTELLIGENCE, CLOUD COMPUTING, AND AUTOMATION ARE REDEFINING JOB ROLES. COMPUTER SCIENCE REMAINS FOUNDATIONAL TO THESE DEVELOPMENTS, AS INNOVATIONS RELY ON SOLID SOFTWARE ENGINEERING AND COMPUTATIONAL RESEARCH.

SIMULTANEOUSLY, DATA SCIENCE IS BECOMING INTEGRAL TO ALMOST EVERY INDUSTRY'S STRATEGIC PLANNING. THE PROLIFERATION OF IoT DEVICES, SOCIAL MEDIA, AND E-COMMERCE GENERATES VAST AMOUNTS OF DATA, CREATING AN ONGOING NEED FOR SKILLED DATA PROFESSIONALS WHO CAN MAKE SENSE OF THIS INFORMATION.

CONSIDERATIONS ON LEARNING CURVE AND ACCESSIBILITY

FOR SOME STUDENTS, THE LEARNING CURVE MAY INFLUENCE THE CHOICE. COMPUTER SCIENCE'S EMPHASIS ON ABSTRACT THINKING AND COMPLEX ALGORITHMS CAN BE CHALLENGING, WHILE DATA SCIENCE'S RELIANCE ON STATISTICS AND MATH MAY PRESENT HURDLES FOR THOSE LESS COMFORTABLE WITH QUANTITATIVE SUBJECTS. HOWEVER, THE ACCESSIBILITY OF ONLINE RESOURCES, BOOT CAMPS, AND SPECIALIZED CERTIFICATIONS HAS MADE BOTH FIELDS MORE APPROACHABLE THAN EVER.

FINAL THOUGHTS ON CHOOSING BETWEEN DATA SCIENCE AND COMPUTER SCIENCE

DECIDING WHETHER "SHOULD I MAJOR IN DATA SCIENCE OR COMPUTER SCIENCE" CANNOT BE ANSWERED WITH A ONE-SIZE-FITS-ALL APPROACH. BOTH DISCIPLINES OFFER COMPELLING OPPORTUNITIES AND REQUIRE DEDICATION. PROSPECTIVE STUDENTS

SHOULD CAREFULLY EVALUATE THEIR INTERESTS, STRENGTHS, AND CAREER ASPIRATIONS, WHILE ALSO CONSIDERING INDUSTRY TRENDS AND ACADEMIC OFFERINGS.

BY UNDERSTANDING THE NUANCES OF EACH MAJOR, INCLUDING CURRICULUM FOCUS, CAREER PATHS, SALARY POTENTIAL, AND FUTURE GROWTH, INDIVIDUALS CAN MAKE A STRATEGIC CHOICE THAT ALIGNS WITH THEIR PERSONAL AND PROFESSIONAL GOALS. ULTIMATELY, THE EVOLVING NATURE OF TECHNOLOGY MEANS CONTINUOUS LEARNING AND ADAPTABILITY WILL BE AS IMPORTANT AS THE INITIAL MAJOR SELECTION.

Should I Major In Data Science Or Computer Science

should i major in data science or computer 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.

should i major in data science or computer 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.

should i major in data science or computer science: *Intelligent Computing and Innovation on Data Science* Sheng-Lung Peng, Le Hoang Son, G. Suseendran, D. Balaganesh, 2020-05-14 This book covers both basic and high-level concepts relating to the intelligent computing paradigm and data sciences in the context of distributed computing, big data, data sciences, high-performance computing and Internet of Things. It is becoming increasingly important to develop adaptive, intelligent computing-centric, energy-aware, secure and privacy-aware systems in high-performance computing and IoT applications. In this context, the book serves as a useful guide for industry practitioners, and also offers beginners a comprehensive introduction to basic and advanced areas of intelligent computing. Further, it provides a platform for researchers, engineers, academics and industrial professionals around the globe to showcase their recent research concerning recent trends. Presenting novel ideas and stimulating interesting discussions, the book appeals to researchers and practitioners working in the field of information technology and computer science.

should i major in data science or computer science: **Computerworld** , 1976-07-05 For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

should i major in data science or computer science: **Assessing and Responding to the Growth of Computer Science Undergraduate Enrollments** National Academies of Sciences, Engineering, and Medicine, Division on Engineering and Physical Sciences, Computer Science and Telecommunications Board, Policy and Global Affairs, Board on Higher Education and Workforce, Committee on the Growth of Computer Science Undergraduate Enrollments, 2018-04-28 The field of computer science (CS) is currently experiencing a surge in undergraduate degree production and course enrollments, which is straining program resources at many institutions and causing concern among faculty and administrators about how best to respond to the rapidly growing demand. There is also significant interest about what this growth will mean for the future of CS programs, the role of computer science in academic institutions, the field as a whole, and U.S. society more broadly. *Assessing and Responding to the Growth of Computer Science Undergraduate Enrollments* seeks to provide a better understanding of the current trends in computing enrollments in the context of past trends. It examines drivers of the current enrollment surge, relationships between the surge and current and potential gains in diversity in the field, and the potential impacts of responses to the increased demand for computing in higher education, and it considers the likely effects of those responses on students, faculty, and institutions. This report provides recommendations for what institutions of higher education, government agencies, and the private sector can do to respond to the surge and plan for a strong and sustainable future for the field of CS in general, the health of the institutions of higher education, and the prosperity of the nation.

should i major in data science or computer science: *Trends of Data Science and Applications* Siddharth Swarup Rautaray, Phani Pemmaraju, Hrushikesha Mohanty, 2021-03-21 This book includes an extended version of selected papers presented at the 11th Industry Symposium 2021 held during January 7–10, 2021. The book covers contributions ranging from theoretical and foundation research, platforms, methods, applications, and tools in all areas. It provides theory and practices in the area of data science, which add a social, geographical, and temporal dimension to data science research. It also includes application-oriented papers that prepare and use data in discovery research. This book contains chapters from academia as well as practitioners on big data technologies, artificial intelligence, machine learning, deep learning, data representation and visualization, business analytics, healthcare analytics, bioinformatics, etc. This book is helpful for the

students, practitioners, researchers as well as industry professional.

should i major in data science or computer science: Opportunities from the Integration of Simulation Science and Data Science National Academies of Sciences, Engineering, and Medicine, Division on Engineering and Physical Sciences, Computer Science and Telecommunications Board, Committee on Future Directions for NSF Advanced Computing Infrastructure to Support U.S. Science in 2017-2020, 2018-07-31 Convergence has been a key topic of discussion about the future of cyberinfrastructure for science and engineering research. Convergence refers both to the combined use of simulation and data-centric techniques in science and engineering research and the possibilities for a single type of cyberinfrastructure to support both techniques. The National Academies of Science, Engineering, and Medicine convened a Workshop on Converging Simulation and Data-Driven Science on May 10, 2018, in Washington, D.C. The workshop featured speakers from universities, national laboratories, technology companies, and federal agencies who addressed the potential benefits and limitations of convergence as they relate to scientific needs, technological capabilities, funding structures, and system design requirements. This publication summarizes the presentations and discussions from the workshop.

should i major in data science or computer science: *The Complete Book of Colleges 2021* The Princeton Review, 2020-07 The mega-guide to 1,349 colleges and universities by the staff of the Princeton Review ... [including] detailed information on admissions, financial aid, cost, and more--Cover.

should i major in data science or computer science: **Applying Data Science and Learning Analytics Throughout a Learner's Lifespan** Trajkovski, Goran, Demeter, Marylee, Hayes, Heather, 2022-05-06 Research in the domains of learning analytics and educational data mining has prototyped an approach where methodologies from data science and machine learning are used to gain insights into the learning process by using large amounts of data. As many training and academic institutions are maturing in their data-driven decision making, useful, scalable, and interesting trends are emerging. Organizations can benefit from sharing information on those efforts. Applying Data Science and Learning Analytics Throughout a Learner's Lifespan examines novel and emerging applications of data science and sister disciplines for gaining insights from data to inform interventions into learners' journeys and interactions with academic institutions. Data is collected at various times and places throughout a learner's lifecycle, and the learners and the institution should benefit from the insights and knowledge gained from this data. Covering topics such as learning analytics dashboards, text network analysis, and employment recruitment, this book is an indispensable resource for educators, computer scientists, faculty of higher education, government officials, educational administration, students of higher education, pre-service teachers, business professionals, researchers, and academicians.

should i major in data science or computer science: **VTAC eGuide 2016** VTAC, 2015-07-15 The VTAC eGuide is the Victorian Tertiary Admissions Centre's annual guide to application for tertiary study, scholarships and special consideration in Victoria, Australia. The eGuide contains course listings and selection criteria for over 1,700 courses at 62 institutions including universities, TAFE institutes and independent tertiary colleges.

should i major in data science or computer science: **30-Second Data Science** Liberty Vittert, 2020-09-29 30-Second Data Science covers 50 key elements in the field of data-gathering from basic to ethics, explained clearly and concisely.

should i major in data science or computer science: Advances in Computing and Data Sciences Mayank Singh, P.K. Gupta, Vipin Tyagi, Jan Flusser, Tuncer Ören, Rekha Kashyap, 2019-07-18 This two-volume set (CCIS 1045 and CCIS 1046) constitutes the refereed proceedings of the Third International Conference on Advances in Computing and Data Sciences, ICACDS 2019, held in Ghaziabad, India, in April 2019. The 112 full papers were carefully reviewed and selected from 621 submissions. The papers are centered around topics like advanced computing, data sciences, distributed systems organizing principles, development frameworks and environments, software verification and validation, computational complexity and cryptography, machine learning

theory, database theory, probabilistic representations.

should i major in data science or computer science: Navigating the Math Major Carrie Diaz Eaton, Allison Henrich, Steven Klee, Jennifer Townsend, 2024-06-14 Are you a mathematics major or thinking about becoming one? This friendly guidebook is for you, no matter where you are in your studies. For those just starting out, there are: interactive exercises to help you chart your personalized course, brief overviews of the typical courses you will encounter during your studies, recommended extracurricular activities that can enrich your mathematical journey. Mathematics majors looking for effective ways to support their success will discover: practical examples of dealing with setbacks and challenges in mathematics, a primer on study skills, including particular advice like how to effectively read mathematical literature and learn mathematically focused programming. Students thinking about life after graduation will find: advice for seeking jobs outside academia, guidance for applying to graduate programs, a collection of interviews with former mathematics majors now working in a wide variety of careers—they share their experience and practical advice for breaking into their field. Packed with a wealth of information, Navigating the Math Major is your comprehensive resource to the undergraduate mathematics degree program.

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