VALUE ADDED COURSE ON MATHEMATICS FOR MACHINE LEARNING PROJECT

CAREER CHASE

Navigating Career Development

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PROBLEM STATEMENT:

This survey aims to investigate the extent to which B. Tech students are embracing and benefiting from the incorporation of cutting-edge technologies in their educational experience. The study will gather insights into students' familiarity with various emerging technologies, their opinions on the effectiveness of these technologies in enhancing learning, and the challenges they perceive in their adoption. By gathering insights from this demographic, we seek to understand how students perceive and utilize cutting-edge technologies in their academic pursuits and daily lives.

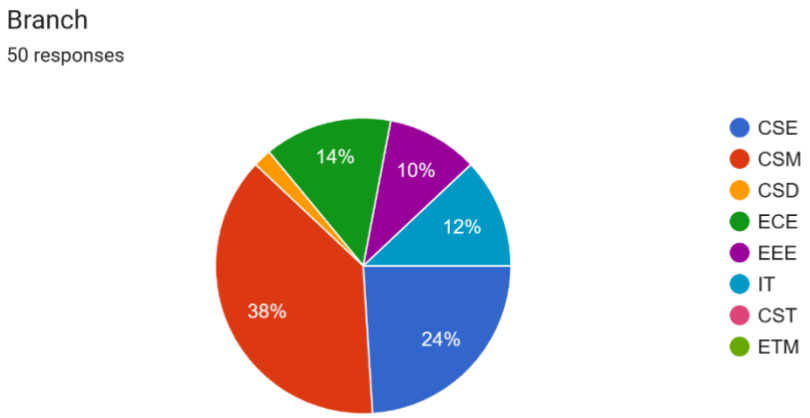
DESCRIPTION:

This report delves into the dynamic landscape of student career development in the digital age. Through an in-depth survey, we explore the proactive measures students are taking to shape their professional journey. From an assessment of familiarity with new technologies and coding practices to utilization of online learning resources, participation in college clubs and hackathons, staying attuned to industry trends through social media, and expressing interest in internships, this study offers a comprehensive analysis of student engagement.

We are employing Factor Component Analysis, a robust statistical technique that enables us to uncover underlying patterns and relationships within the collected data. By reducing the multitude of observed variables into a smaller set of latent factors, this method allows us to extract meaningful insights and dimensions that define the complex interplay of students' career-building endeavours.

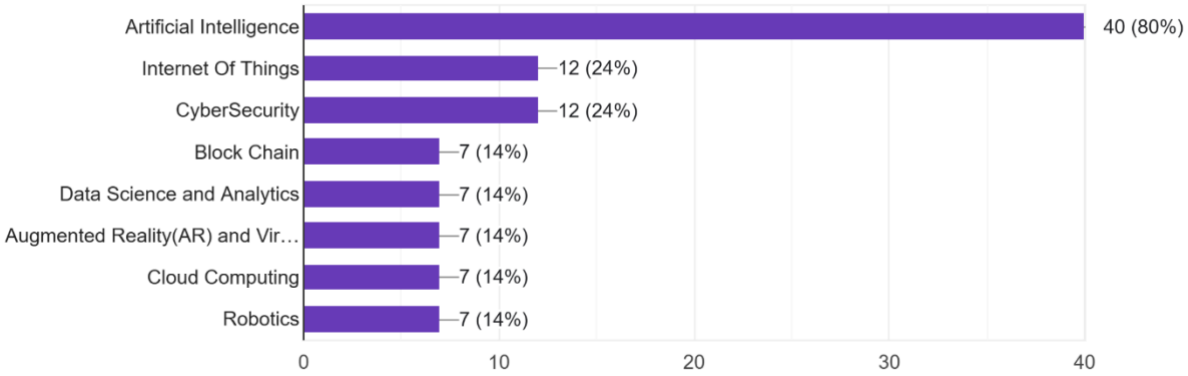
VISUALIZING SURVEY RESULTS:

We have collected 50 responses from the survey comprising 11 questions in the Google Form, which are related to the latest technologies.



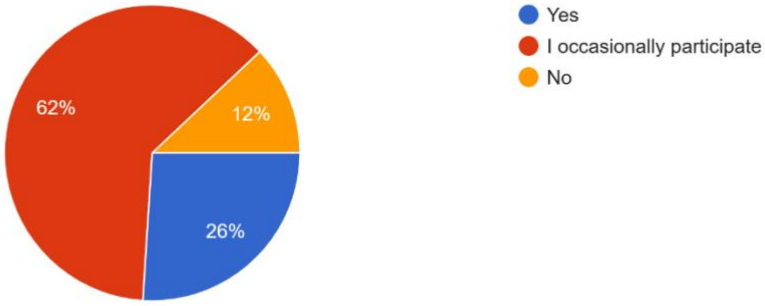
How familiar are you with the following technologies ?

50 responses



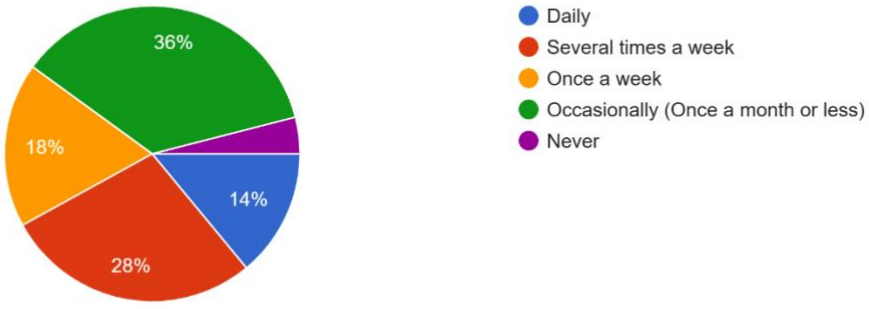
Do you actively participate in any technology-related clubs or organizations in your college?

50 responses



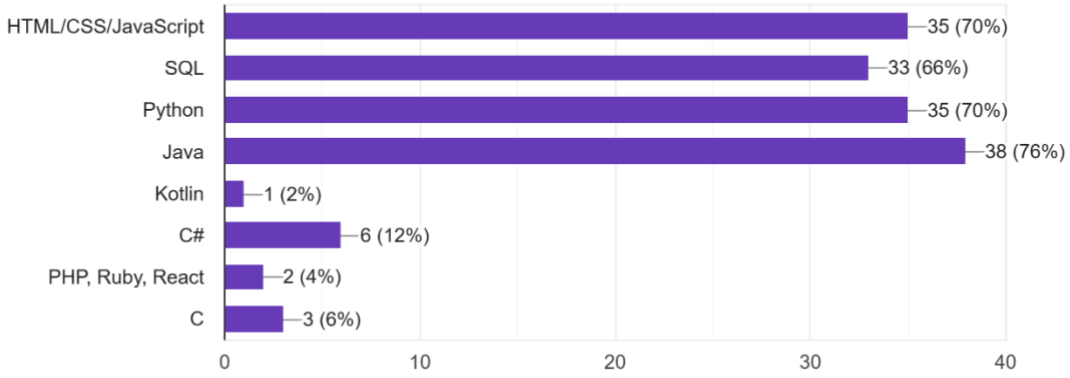
How often do you engage in coding or programming activities outside of your course work?

50 responses



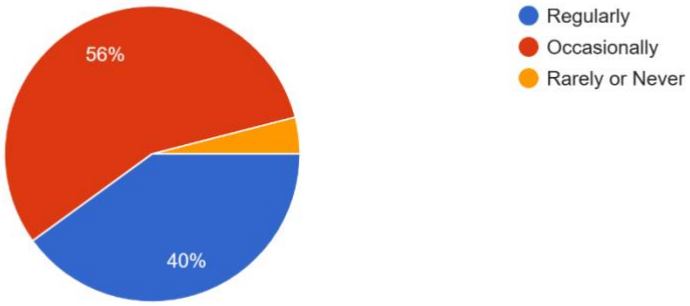
Are you familiar with any programming languages and frameworks that are in high demand in industry?

50 responses



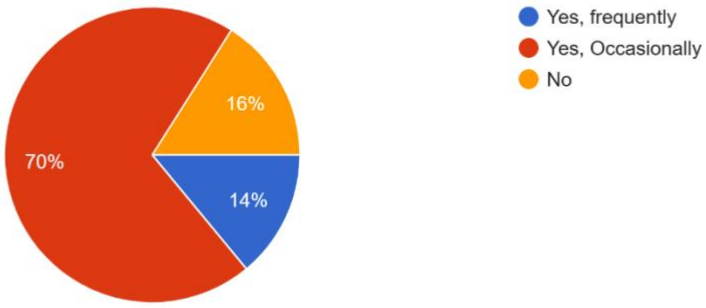
How often do you use online learning platforms or resources to enhance your technical skills?

50 responses



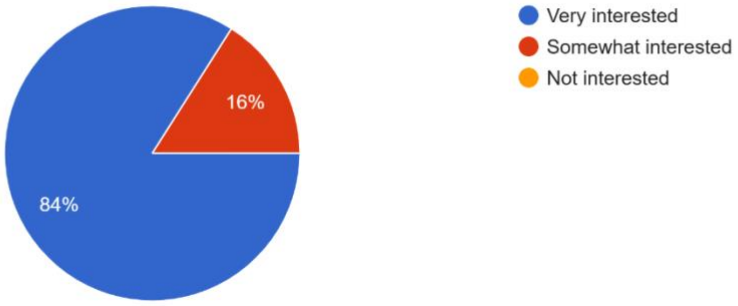
Have you participated in any hackathons or tech related extra curricular activities?

50 responses



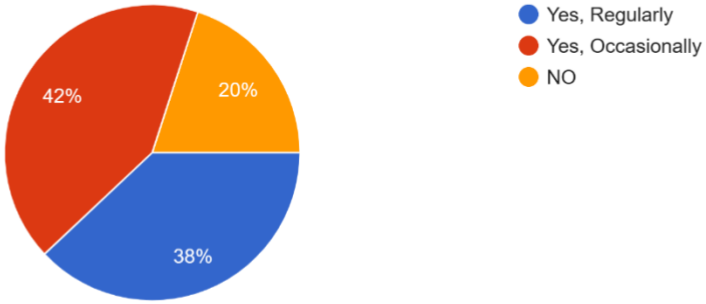
How interested are you in pursuing internships or projects related to the latest technologies?

50 responses



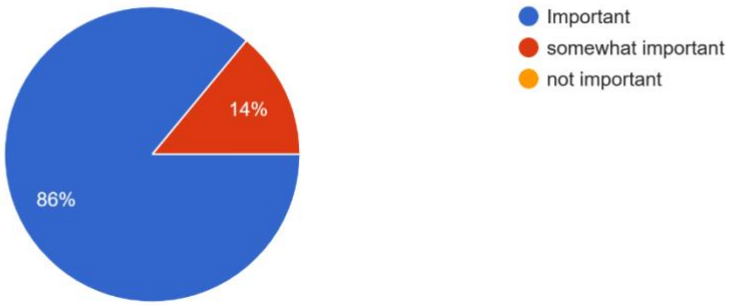
Do you follow any technology blogs, podcasts or you tube channels to stay updated on the latest trends and advancements?

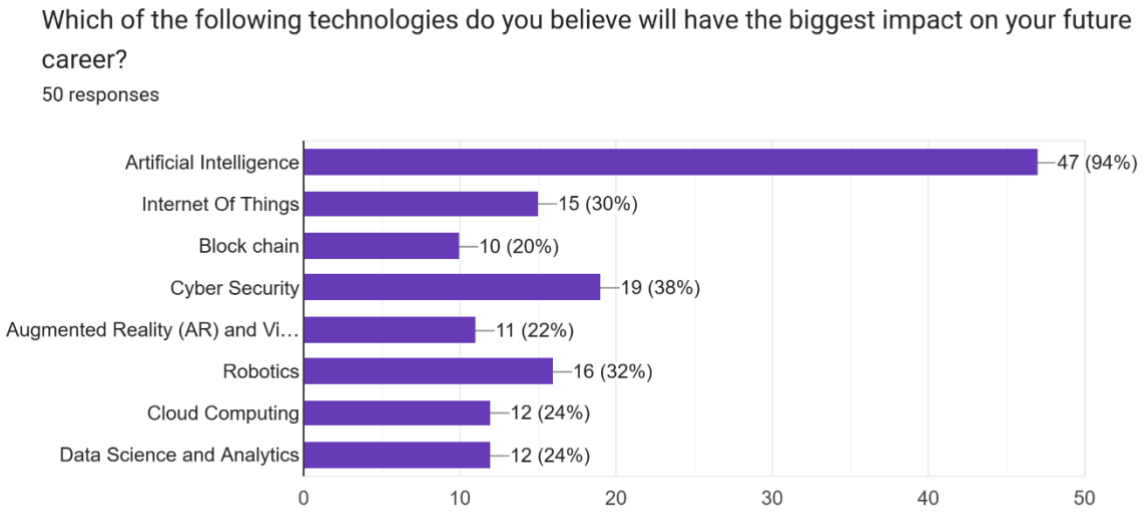
50 responses



How do you consider staying updated with the latest technologies for your future career success?

50 responses





OBSERVATIONS AND CALCULATIONS:

Branch	How familiar are you with the following technologies ?	Do you actively participate in any technology-related clubs or organizations in your college?	How often do you engage in coding or programming activities outside of your course work?	Are you familiar with any programming languages and frameworks that are in high demand in industry?	How often do you use online learning platforms or resources to enhance your technical skills?	Have you participated in any hackathons or tech related extra curricular activities?	How interested are you in pursuing internships or projects related to the latest technologies?	Do you follow any technology blogs, podcasts or you tube channels to stay updated on the latest trends and advancements?	How do you consider staying updated with the latest technologies for your future career success?	Which of the following technologies do you believe will have the biggest impact on your future career?
0.24	0.125	0.26	0.14	0.429	0.4	0.14	0.84	0.42	0.86	0.25
0.24	0.125	0.62	0.28	0.286	0.56	0.7	0.16	0.42	0.86	0.375
0.12	1	0.62	0.18	0.286	0.56	0.7	0.16	0.42	0.14	0.125
0.24	0.75	0.26	0.28	0.714	0.4	0.14	0.84	0.42	0.86	1
0.24	0.125	0.62	0.18	0.571	0.4	0.7	0.84	0.38	0.86	0.375
0.38	0.75	0.62	0.18	0.429	0.56	0.7	0.84	0.42	0.14	0.375
0.38	0.125	0.26	0.18	0.571	0.56	0.7	0.84	0.42	0.86	0.375
0.38	1	0.62	0.36	0.571	0.56	0.7	0.16	0.42	0.14	1
0.38	0.375	0.62	0.18	0.571	0.56	0.7	0.84	0.38	0.86	0.375
0.38	0.125	0.62	0.18	0.429	0.56	0.96	0.84	0.38	0.86	0.375
0.38	0.125	0.62	0.28	0.286	0.4	0.96	0.84	0.42	0.86	0.5
0.38	0.75	0.62	0.36	1.000	0.4	0.7	0.84	0.38	0.86	0.625
0.38	0.25	0.26	0.14	0.571	0.4	0.7	0.84	0.38	0.86	0.375
0.1	0.125	0.62	0.14	0.571	0.56	0.7	0.16	0.2	0.14	0.125
0.12	0.125	0.26	0.28	0.429	0.4	0.14	0.84	0.38	0.86	0.375
0.24	0.25	0.62	0.28	0.571	0.4	0.7	0.84	0.2	0.86	0.125
0.14	0.125	0.26	0.28	0.143	0.4	0.14	0.84	0.38	0.86	0.5
0.14	0.125	0.26	0.36	0.143	0.56	0.7	0.84	0.42	0.86	0.25
0.1	0.125	0.26	0.28	0.286	0.56	0.7	0.84	0.38	0.86	0.25
0.24	0.125	0.62	0.28	0.286	0.56	0.7	0.16	0.2	0.86	0.125
0.24	0.125	0.62	0.36	0.286	0.56	0.7	0.84	0.42	0.86	0.125
0.24	0.125	0.26	0.14	0.429	0.4	0.14	0.84	0.42	0.86	0.25
0.24	0.125	0.62	0.28	0.286	0.56	0.7	0.16	0.42	0.86	0.375
0.12	1	0.62	0.18	0.286	0.56	0.7	0.16	0.42	0.14	0.125
0.24	0.75	0.26	0.28	0.714	0.4	0.14	0.84	0.42	0.86	1
0.24	0.125	0.62	0.18	0.571	0.4	0.7	0.84	0.38	0.86	0.375
0.38	0.75	0.62	0.18	0.429	0.56	0.7	0.84	0.42	0.14	0.375
0.38	0.125	0.26	0.18	0.571	0.56	0.7	0.84	0.42	0.86	0.375
0.38	1	0.62	0.36	0.571	0.56	0.7	0.16	0.42	0.14	1
0.38	0.375	0.62	0.18	0.571	0.56	0.7	0.84	0.38	0.86	0.375

0.14	0.125	0.12	0.04	0.143	0.04	0.96	0.84	0.42	0.86	0.125
0.38	0.375	0.62	0.28	1.143	0.56	0.7	0.84	0.38	0.86	0.75
0.24	0.125	0.62	0.36	0.429	0.56	0.7	0.84	0.38	0.86	0.125
0.38	0.125	0.12	0.36	0.571	0.4	0.7	0.84	0.2	0.86	0.125
0.38	0.375	0.62	0.18	0.571	0.56	0.96	0.84	0.2	0.86	0.125
0.24	0.25	0.62	0.36	0.714	0.56	0.7	0.84	0.2	0.86	0.875
0.02	0.125	0.26	0.36	0.571	0.56	0.7	0.84	0.42	0.86	0.5
0.14	0.125	0.12	0.36	0.143	0.04	0.96	0.16	0.2	0.14	0.5
0.24	0.125	0.12	0.28	0.429	0.56	0.96	0.84	0.42	0.86	0.125
0.24	0.125	0.26	0.28	0.571	0.4	0.14	0.84	0.38	0.86	0.5
0.38	0.125	0.62	0.36	0.571	0.56	0.7	0.84	0.2	0.86	0.125
0.1	0.125	0.12	0.04	0.571	0.4	0.96	0.84	0.42	0.86	0.125
0.38	0.125	0.26	0.18	0.429	0.56	0.14	0.84	0.42	0.86	0.125
0.38	1	0.62	0.18	0.571	0.56	0.7	0.84	0.38	0.86	0.5
0.24	0.25	0.62	0.28	0.571	0.4	0.7	0.84	0.2	0.86	0.125

0.38	0.125	0.62	0.28	0.571	0.4	0.7	0.84	0.42	0.86	0.375
0.38	0.125	0.62	0.36	0.429	0.56	0.7	0.84	0.42	0.86	0.5
0.14	0.125	0.62	0.36	0.143	0.4	0.96	0.84	0.42	0.86	0.125
0.12	0.125	0.62	0.36	0.571	0.56	0.7	0.84	0.38	0.86	0.125
0.14	0.125	0.26	0.36	0.143	0.56	0.7	0.84	0.38	0.86	0.375
0.38	0.25	0.62	0.36	0.429	0.56	0.7	0.16	0.2	0.14	0.25
0.38	0.125	0.62	0.36	0.571	0.56	0.7	0.16	0.2	0.86	0.5
0.14	0.125	0.12	0.36	0.286	0.56	0.7	0.84	0.38	0.86	0.125
0.12	0.25	0.62	0.28	0.429	0.4	0.7	0.84	0.42	0.86	0.75
0.38	0.125	0.62	0.36	0.571	0.56	0.7	0.84	0.42	0.14	0.25
0.1	0.125	0.26	0.14	0.143	0.4	0.7	0.84	0.38	0.86	0.125
0.12	0.125	0.62	0.28	0.429	0.4	0.7	0.84	0.38	0.86	0.125
0.1	0.125	0.62	0.14	0.143	0.4	0.7	0.84	0.38	0.86	0.125
0.12	0.25	0.62	0.14	0.286	0.4	0.7	0.84	0.38	0.86	0.875
0.24	0.25	0.62	0.14	0.429	0.4	0.14	0.84	0.42	0.86	0.375

ANALYSIS:

	1	2	3	4	5	6	7	8	9	10	11
1	1										
2	0.271	1									
3	0.326	0.273	1								
4	0.103	-0.076	0.123	1							
5	0.501	0.33	0.251	0.092	1						
6	0.286	0.152	0.366	0.281	0.256	1					
7	0.038	-0.046	0.176	0.04	-0.095	-0.01	1				
8	-0.004	-0.199	-0.199	-0.132	0.117	-0.073	-0.131	1			
9	-0.142	0.134	-0.138	-0.22	-0.141	-0.005	-0.175	0.415	1		
10	-0.0771	-0.386	-0.166	-0.067	0.039	-0.036	-0.129	0.61	0.172	1	
11	0.18	0.426	0.141	0.169	0.381	-0.049	-0.206	-0.04	0.13	-0.037	1

Colour Scales are premade types of conditional formatting in Excel used to highlight cells in a range to indicate how large the cell values are compared to the other values in the range. The colour on the top of the icon  will apply to the highest values. Dark green is used for the highest correlated factors and dark red for the lowest correlated factors.

As the factors 1 and 1,2 and 2 and so on.. are perfectly correlated in the correlated table, the colour green is used to represent this relationship. All the cells in the range gradually change colour from green, yellow, orange, then red

CONCLUSION:

With the help of a correlation table. The groups formed are:

Group 1:

- How interested are you in pursuing internships or projects related to the latest technologies?
- Do you follow any technology blogs, podcasts or you tube channels to stay updated on the latest trends and advancements?
- How do you consider staying updated with the latest technologies for your future career success?

Group 2:

- Branch
- How familiar are you with the following technologies?
- Are you familiar with any programming languages and frameworks that are in high demand in the industry?
- Which of the following technologies do you believe will have the biggest impact on your future career?

Group 3:

- Do you actively participate in any technology-related clubs or organizations in your college?
- How often do you engage in coding or programming activities outside of your coursework?
- How often do you use online learning platforms or resources to enhance your technical skills?
- Have you participated in any hackathons or tech related extracurricular activities?

Group 1:

The Factor Component Analysis yielded a compelling grouping comprising internships, social media engagement, and staying updated. This intriguing correlation highlights a symbiotic relationship between these factors, where students actively pursuing internships demonstrate an inclination towards leveraging social media platforms for real-time industry insights. This amalgamation underscores their proactive approach to remaining attuned to evolving trends, ultimately enhancing their internship experiences. The instant and widespread nature of social media equips students with a continuous stream of information, aligning seamlessly with their aspirations for practical application in internships. Consequently, this convergence underscores students' strategic and holistic approach to career development, combining experiential learning, digital connectivity, and industry awareness to position themselves as adaptable and well-prepared individuals within the dynamic professional landscape.

Group 2:

The factor component analysis of the survey data yielded valuable insights. It highlighted strong correlations between major courses and programming languages; for instance, Computer Science students leaned towards Python and Java. Emerging technologies like AI, IoT, and Blockchain were closely associated with Information Technology and Electronics & Communication Engineering. Noteworthy was the emergence of a cross-disciplinary group interested in Data Science and Cloud Computing, indicating a trend towards technology convergence.

Group 3:

Through a rigorous factor component analysis of the survey data, a distinct and interconnected group of activities emerged, reflecting the multifaceted approach students adopt in their career development. Participation in technical clubs, coding practice, hackathons, and utilization of online resources coalesced into a cohesive cluster, indicative of a proactive and technology-driven mindset. This grouping underscores the intrinsic relationship between hands-on engagement and knowledge acquisition in today's digital age. This confluence of factors highlights a symbiotic relationship – as students immerse themselves in coding practice and engage in hackathons, they simultaneously leverage online resources to augment their skills and stay attuned to industry advancements.