

# Bachelor Thesis

**Bachelor of Computer Application (BCA)**

**Batch: 2020-2023**



**Student Name: Sarthak Dhasmana(35527902020)**



**Trinity Institute of Innovation in Professional Studies, Greater Noida**

**(Affiliated to Guru Gobind Singh Indraprastha University)**

# ABSTRACT

This bachelor thesis represents Sarthak Dhasmana's culmination of their Bachelor of Computer Applications (BCA) degree, integrating the pivotal components of summer training, minor project, and major project modules. Each segment is meticulously detailed within this document, elucidating the theoretical underpinnings, practical applications, and technical intricacies encountered throughout their academic journey. Through an immersive exploration of these modules, Sarthak Dhasmana has honed their skills, expanded their knowledge base, and developed a nuanced understanding of computer science principles, thereby preparing them for future endeavors in the field.

The summer training segment provided me with a theoretical immersion into the world of Artificial Intelligence, offering valuable insights into algorithms and methodologies. Subsequently, the minor project allowed me to delve deeper into frontend development, fostering independent exploration and innovation. Finally, the major project served as a comprehensive endeavor, requiring the integration of frontend and backend development, design considerations, and project management skills. Each module contributed to my holistic development as a computer science professional, equipping me with the expertise and acumen necessary to navigate complex challenges in the field.

In this thesis, I provide detailed explanations of the methodologies, challenges, and outcomes encountered in each module, supplemented by links to relevant files, codes, and resources. By encapsulating their academic journey within these pages, I not only document my own growth and achievements but also contributes to the broader discourse on computer science education and professional development.

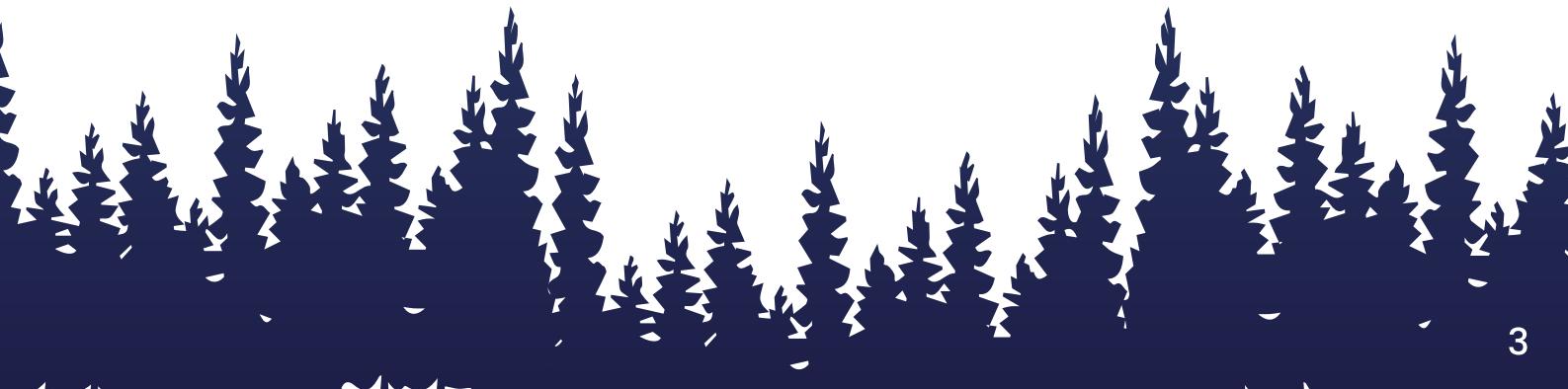


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Bachelor Thesis Files Link:

<https://drive.google.com/drive/folders/16gqxAawaN118YKRAfbd4akJezFE-m1pz?usp=sharing>



# CERTIFICATE

To whomsoever it may concern

This is to certify that the bachelor thesis has been made by **Sarthak Dhasmana (35527902020)** from Bachelor of Computer Application (BCA). This report and project is an authentic work carried out by Sarthak Dhasmana under the guidance and supervision of **Dr Meenakshi Chaturvedi(HOD)**.

The bachelor thesis submitted has been found Satisfactory for the fulfillment of the requirements for the award of the Degree of Bachelor of Computer Application (BCA) submitted to the Guru Gobind Singh Indraprastha University

Head of Department(HOD)

28-06-2023

**DR. Meenakshi Chaturvedi**

Date



# **ACKNOWLEDGEMENT**

We offer our sincere thanks and humble regards to **Trinity Institute of Innovation in Professional Studies(TIIPS)** Affiliated to Guru Gobind Singh Indraprastha University, New Delhi for imparting us very valuable professional training in Bachelor of Computer Application(BCA).

We pay our gratitude and sincere regards to Dr. Meenakshi Chaturvedi our project guide for giving us the cream of knowledge. We are thankful to her as she has been constant source of advice, motivation and inspiration. We are also thankful to her for giving her suggestions and encouragement throughout the project.

We extend our sincere thanks to our respected Director Dr Ravindra Kumar Tewatia, for allowing us to use the facilities available. We would like to thank other faculty members also at this occasion

**Name :** Sarthak Dhasmana

**Roll No :** 35527902020

**Course :** Bachelor of Computer Applications(BCA)



### About Summer Training :

This 4-week summer training, completed after the fourth semester, provided an in-depth study of Artificial Intelligence (AI). Through this program, I gained foundational knowledge and theoretical insights into AI, which significantly increased my interest in the field. The training covered key concepts, techniques, and applications of AI, helping me understand what Artificial Intelligence is all about and its potential impacts.

### Key Learnings of Summer Training in Artificial Intelligence

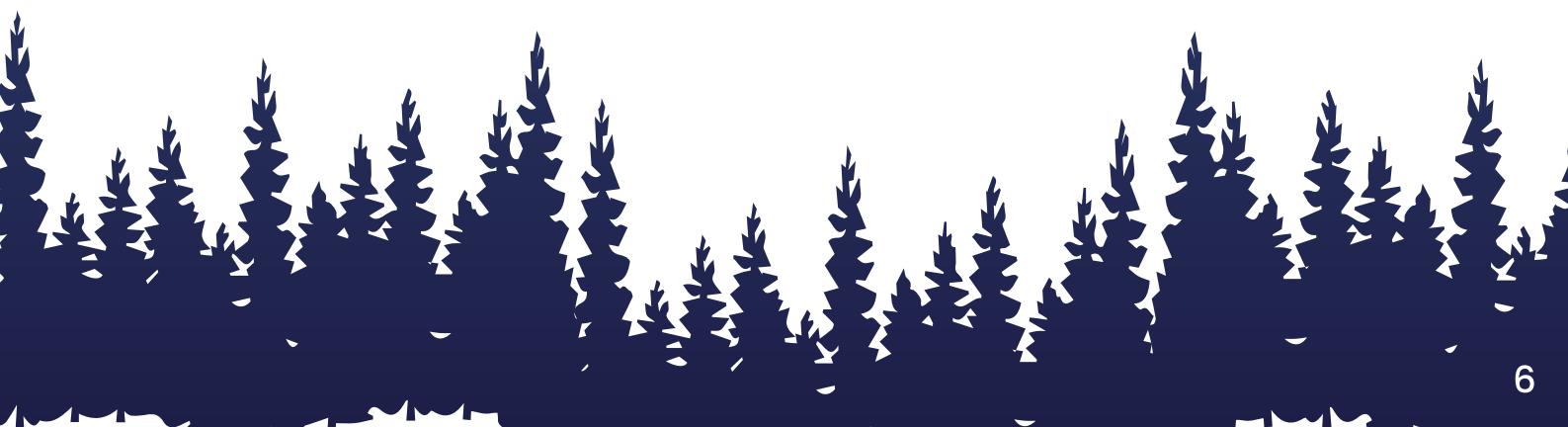
- Comprehensive understanding of AI fundamentals.
- Exposure to AI techniques and applications.
- Learning Artificial Intelligence Algorithms
- Enhanced interest and enthusiasm for further studies in AI.

### Evaluation criteria of Summer training :

- It was based on the course they we opted for
- The content in summer training
- students have to explain their topics in full depth of the training that they did.
- Explanation was given to the whole class and to 3 professors about what I did in summer training

### Links and Credit Points of Summer training :

- **Summer Training Topic:** Artificial Intelligence
- **Credit Points:** 2 CP
- **Training Course:** An Introduction to Artificial Intelligence
- **Training Course Link:** [https://onlinecourses.nptel.ac.in/noc23\\_cs05/course](https://onlinecourses.nptel.ac.in/noc23_cs05/course)



### Proof of Summer Training Credit Points and other:

- Course and module description of Bachelor of Computer Application :

Link: <https://sarthakdhasmana.github.io/SyllabusBCA/Syllabus%20BCA%202023.pdf>

- Proof of Summer Training held at the end of 4th semester : Page no. 5

**\*NUES**

**TOTAL MARKS: 800**

**Summer Training will be held for 4 weeks after the end of fourth semester.  
Viva-Voce will be conducted in fifth semester.**

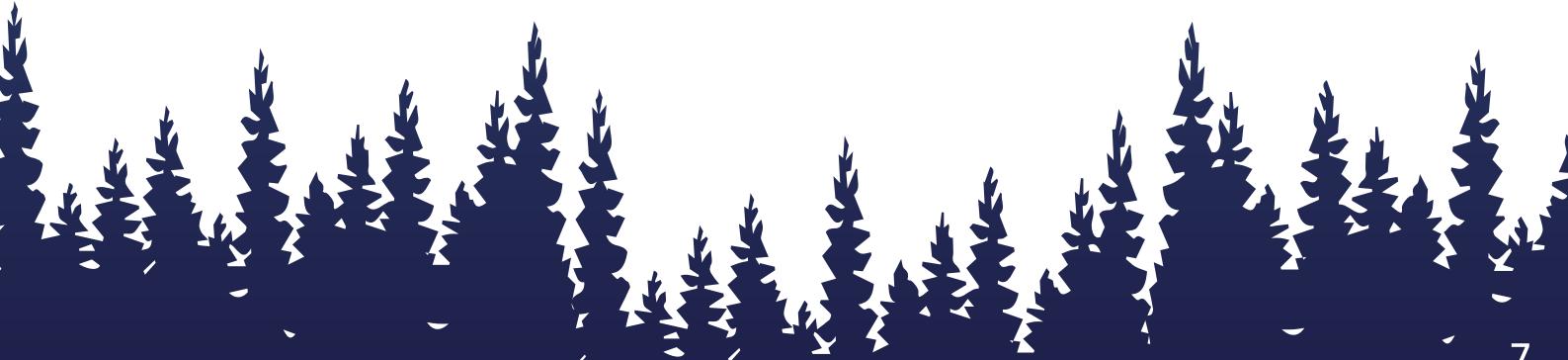
- Proof of Summer Training Credit Points(2) Page no. 6

		Credits	Marks Internal		
BCA 355*	Summer Project/ Training	0	0	2	100
BCA 357	Minor Project	---	8	4	40
	<b>Total</b>	<b>12</b>	<b>20</b>	<b>26</b>	<b>280</b>
					<b>420</b>

**\*Evaluation will be based on Summer Training held after fourth semester and will be conducted by the college committee only.**

- Summer Training Report Link:

<https://drive.google.com/file/d/1g5ASCPwMU9OnPqq3d8tXBfuDYeOFkaWs/view?usp=sharing>



### About Minor Project:

This minor project involved an individual effort on a technology of choice. I chose to work independently in the field of frontend development, creating a website for a startup called Bir Billing Tourism Services. The project aimed to develop a website that effectively showcases the business, detailing the services offered to tourists and presenting various price packages in an appealing manner.

### Key Learnings of Minor Project for Bir Billing Tourism

- Showcased skills in HTML, CSS, JavaScript, Figma, and Canva.
- Gained practical insights into real-world applications.
- Learned effective time management within a short timeframe.
- Developed a deeper understanding of industry practices.

### Evaluation criteria of Minor project :

- Focused on frontend development technology, emphasizing clean code and file management.
- Created a project report detailing the chosen technology and development process.
- Presented and explained the project to an internal examiner and two external examiners.
- Answered field-specific questions from the 2 external and 1 internal examiners about frontend development.

### Links and Credit Points of Minor project :

- Minor Project Field: Frontend Development
- Credit Points: 4 CP
- Project Website: <https://bir-billing-tourism.vercel.app/>
- Project Code and Report: <https://drive.google.com/drive/folders/1YvdMWXjSo2HpTfUck4nYspbQdAJyK2y4?usp=sharing>



### Proof of Minor Project Credit Points and other:

- Course and module description of Bachelor of Computer Application :

Link: <https://sarthakdhasmana.github.io/SyllabusBCA/Syllabus%20BCA%202023.pdf>

- Proof of Minor Project Credit Points(4) and marks, Page no. 6

		Credits	Marks Internal	Marks External	
BCA 355*	Summer Project/ Training	0	0	2	100
BCA 357	Minor Project	---	8	4	40
					60
	<b>Total</b>	<b>12</b>	<b>20</b>	<b>26</b>	<b>280</b>
					<b>420</b>

\*Evaluation will be based on Summer Training held after fourth semester and will be conducted by the college committee only.

- Minor Project Report Link:

<https://drive.google.com/file/d/1SEAojiC6l1m7jW2gddV3ZkGs1piduq32/view?usp=sharing>

- Bachelor Thesis Files Link:

<https://drive.google.com/drive/folders/16gqxAawaN118YKRAfbd4akJezFE-m1pz?usp=sharing>

### About Major Project:

For my major project, I chose to work on a web development project for AstroDhara, a startup offering astrology-related services. This comprehensive project involved both frontend and backend development. Starting with web design, I proceeded to code the frontend, followed by backend development. I then integrated the backend with the frontend, tested the website across various platforms, and deployed the final product using a domain. The project required significant effort as the startup had only a conceptual idea, necessitating detailed planning and execution at every stage. Major project includes the code of website and project report of the website

### Key Learnings of Major Project for AstroDhara

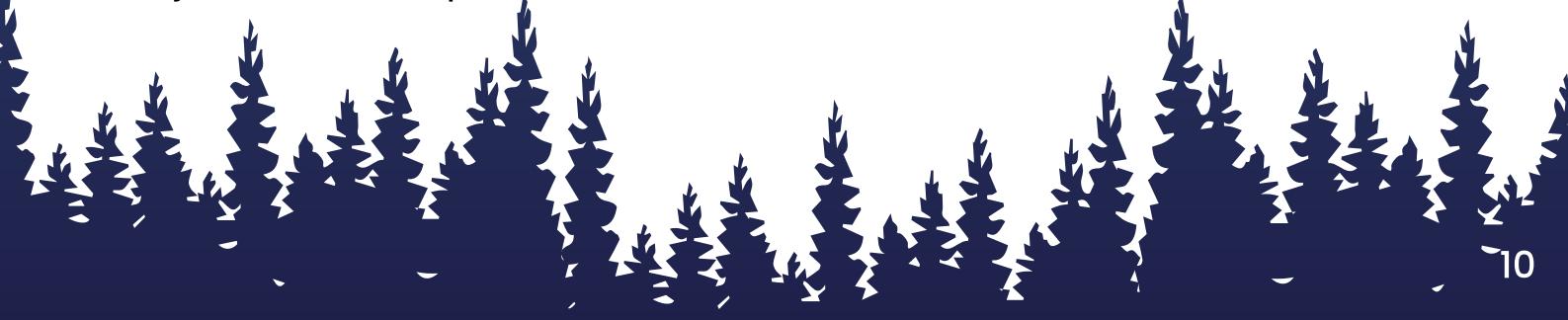
- Utilized skills in HTML, CSS, JavaScript, Figma, Git, Firebase, and Vercel.
- Gained practical experience in maximizing website potential.
- Enhanced frontend skills and gained experience in backend development.
- Improved understanding of web development workflows and standards.

### Evaluation criteria of Major project :

- Focused on frontend and backend development, emphasizing website design, responsiveness, loading time, UI/UX experience, and maintaining clean code and file management practices.
- Created a project report about the technologies used and development process.
- Presented and explained the project to an internal examiner and two external examiners.
- Addressed challenges encountered during project development and questions based on both frontend and backend development. question were asked from project report as well

### Links and Credit Points of Major Project :

- Major Project Field: Web Development
- Credit Points: 5 CP
- Project Website: <https://astro-dhara-website.vercel.app>
- Project Code and Report: <https://drive.google.com/drive/folders/1xBlij2uNvfbQAIOT2pc4waqf8a7higRN?usp=sharing>



### Proof of Minor Project Credit Points and other:

- Course and module description of Bachelor of Computer Application :

Link: <https://sarthakdhasmana.github.io/SyllabusBCA/Syllabus%20BCA%202023.pdf>

- Proof of Major Project Credit Points(5) and marks Page no. 6

		Credits	Marks Internal	Marks External	
BCA 352	Practical – X Linux Lab	0	4	2	40 60
BCA 356	Major Project	----	10	5	40 60
BCA 358**	Seminar	2	0	2	100
	<b>Total</b>	<b>14</b>	<b>18</b>	<b>25</b>	<b>280 420</b>

**Note:**

- Summer Training Report Link:

[https://drive.google.com/file/d/1BTBFdrn5s\\_PFCm6Akz9lnws9\\_9uglj6-/view?usp=sharing](https://drive.google.com/file/d/1BTBFdrn5s_PFCm6Akz9lnws9_9uglj6-/view?usp=sharing)

- Bachelor Thesis Files Link:

<https://drive.google.com/drive/folders/16gqxAawaN118YKRAfbd4akJezFE-m1pz?usp=sharing>

