FR. CONCEICAO RODRIGUES INSTITUTE OF TECHNOLOGY

ZEPHYR
2022

BY DEPARTMENT OF COMPUTER
ENGINEERING

CONTENTS

FROM THE HEAD OF THE DEPARTMENT

Dr. Lata Ragha Head of
the Department,
Computer Engineering

In this regard, the Department magazine offers an ideal forum for students to think, reflect, create and innovate in a multitude of languages.

The magazine is an excellent platform for the budding engineers to bring out their latent abilities and is indeed a precious document that preserves their invaluable piece of work. It is a significant milestone in their creative journeys and inspires them to aspire higher.

The 2022-2023 edition of Zephyr helps to showcase the activities that are happening in the department. It provides an avenue to showcase the merits and academic achievements of the students.In addition to the numerous achievements of the department, this is yet another milestone in the co-curricular activities.

I hope this magazine aims to inspire and nurture upcoming engineers to bring a revolution in this ever-evolving world of technology. It captures the zeitgeist of the current technological advancements and provides the platform to our students for exhibiting their true talent and creativity through various genres of writings. It also helps in building up teamwork which is very much needed today in the world of competition.

I congratulate and thank all the students and staff coordinators who have made untiring efforts to bring out this magazine. Reading this magazine would definitely be an inspiration and motivation for all students and staff to contribute even more to the forthcoming issues. I hope that everyone would continue to give their full efforts to keep the momentum and continue to enhance the standards of the magazine.

DEPARTMENT DETAILS

DEPARTMENT DETAILS

The four-year Computer Engineering Degree Course was started in the year 1994 and it was accredited for three years from 2006, reaccredited for two years w.e.f 2012 and, reaccredited again for two years w.e.f 2019. B.E Computer engineering course introduces the student to the world of programming starting with the basics and slowly leading towards the high-end programming technologies along with basic, core and specialized (electives) subjects during the duration of four years.

Besides this, Computer Department Association – ACESS (Agnel Computer Engineering Students Symposium) plays a major role in conducting various workshops and Short term Training courses on Machine Learning, Storage Area Network (SAN), Web Designing, Open Source Technologies, Python, Robotics, Advanced Mobile Technology, Data Science etc. to keep the students at par with the requirements of the industry and to make them successful professionals. The collaboration of the department with industries like EC-Council, Myra Technologies has helped in conducting training programs in the field of Security, Machine Learning which also gives exposure to students about latest technologies and tools used in the industry. Apart from this, students are also encouraged to become members of professional societies like CSI, IEEE etc., to enroll for various internship programs and to develop their programming skills thru Programmer's Club.

Department has well qualified faculty members who are specialized in various areas. Students implement real time projects which are mostly research oriented guided by faculty in the final year as part of their curriculum which trains them to be highly competent computer software professionals needed by industry. As part of final year projects, various groups have undertaken projects from reputed industries and research centres like Persistent, Reliance, BARC and TIFR. TIFR projects taken up by the department have been successfully completed and deployed at the Research Institute.

For further details Visit us@
https://fcrit.ac.in/academics/under-graduate/computer

DEPARTMENT VISION AND MISSION

Vision:

To contribute significantly towards industry and research oriented technical education leading to self-sustainable professionals and responsible citizens.

Mission:

1. To provide quality and application oriented education to meet the industry requirements.

2. To prepare technically competent, ethically and socially committed professionals with good leadership qualities.

3. To facilitate an opportunity to interact with prominent institutes, alumni and industries to understand the emerging trends in computer technology.

PROGRAM EDUCATIONAL OBJECTIVES

Graduates will be able to:

1. Excel in professional career and higher education in the thrust area of Computer Engineering.

2. Develop software products by adapting the trends in technology to solve real life problems.

3. Exhibit ethical practices, professional conduct and leadership qualities.

PROGRAM SPECIFIC OUTCOMES

At the end of the Bachelor of Computer Engineering Program, graduates will be to :
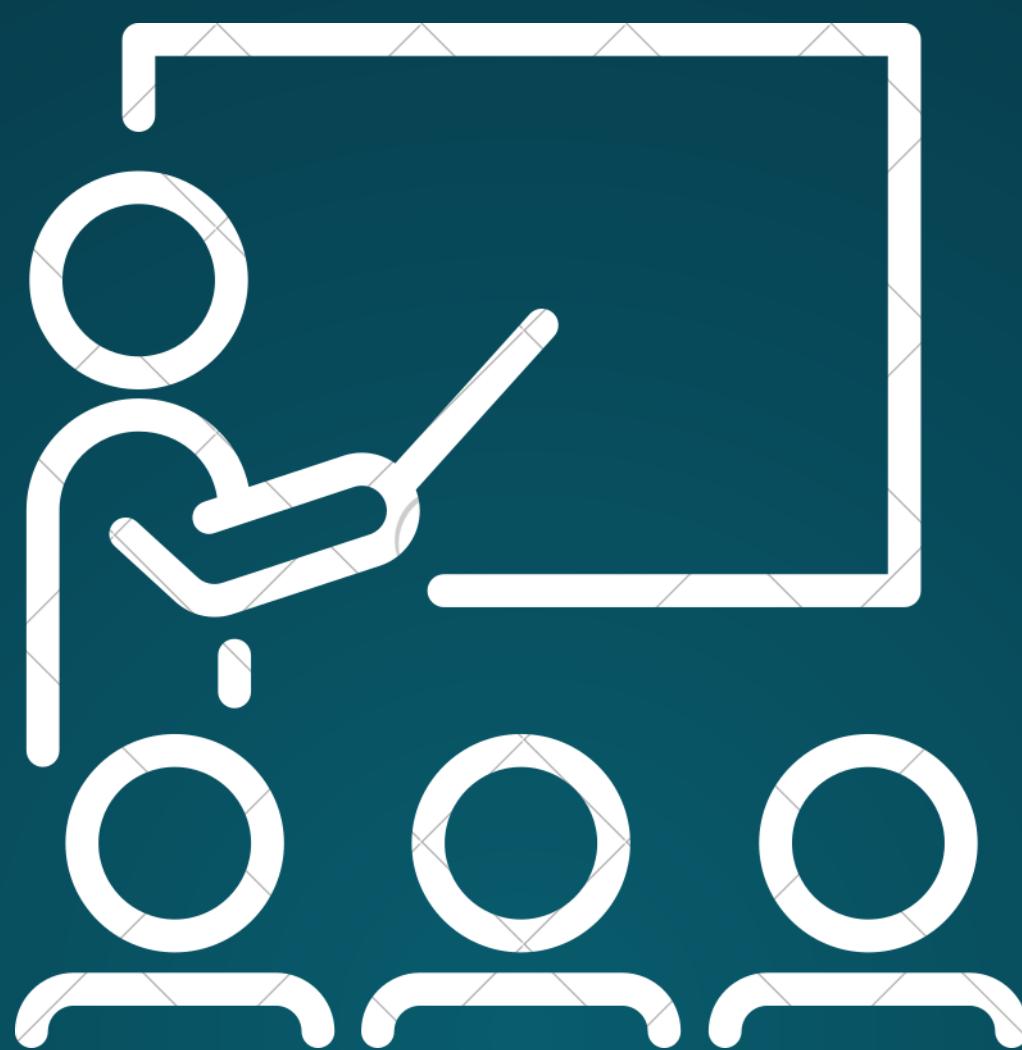
PSO1 - To comprehend, analyze and develop solutions in the areas of Web Technologies, Data Science, Networking and System Security.

PSO2 - To inculcate self-learning and research attitude for excelling in Software Development.

Program Outcomes (PO's).

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

FACULTY DETAILS

FACULTY DETAILS

Dr. Lata Ragha
B.E., M.TECH, PH.D
Professor & HOD

Mrs. M. Kiruthika
PH.D
Associate Professor

Dr. Jyoti More
PH.D
Associate Professor

Dr. Chhaya Pawar
PH.D
Associate Professor

Mrs. Amroz Siddiqui
M.TECH
Assistant Professor

Ms. Smita Dange
PHD (PURSUING)
Assistant Professor

FACULTY DETAILS

Ms. Rakhi Kalantri
PHD (PURSUING)

Assistant Professor

Ms. Shahgufta Rajguru
**M.E (COMP)**

Assistant Professor
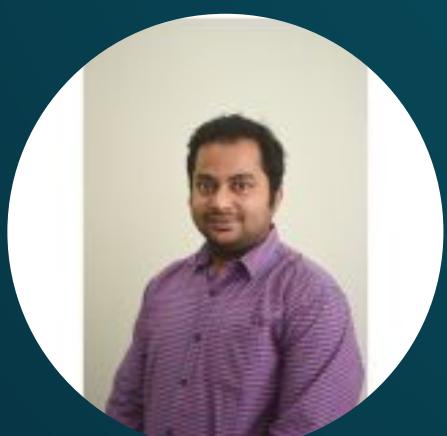
Ms. Kavita Shelke
PHD (PURSUING)

Assistant Professor

Ms. Dakshyani
M.E (COMP)

Assistant Professor

Mr. Mritunjay Ojha
M.E(COMP)

Assistant Professor

Mr. Rahul Jadhav
M.E(COMP)

Assistant Professor

FACULTY DETAILS

Mrs. Smita Rukhande
M.E

Assistant Professor

Mrs. Chetana Badgujar
M.E

Assistant Professor

Priyamvada Singh Chauhan
M.TECH.

Assistant Professor
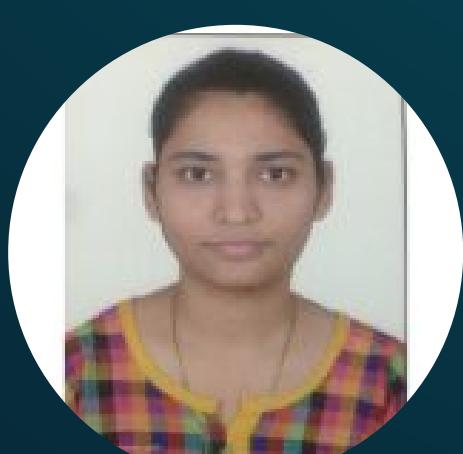
Dr. Pravin Rahate
PH.D

Assistant Professor

Ms. N. Padmashri
M.E

Assistant Professor

Ms. Snehal Nikalje
M.E

Assistant Professor

FACULTY DETAILS

Mrs. Prachi Verma
M.TECH

Assistant Professor

Mrs. Nupur Gaikwad
M.E (COMPUTER)

Assistant Professor
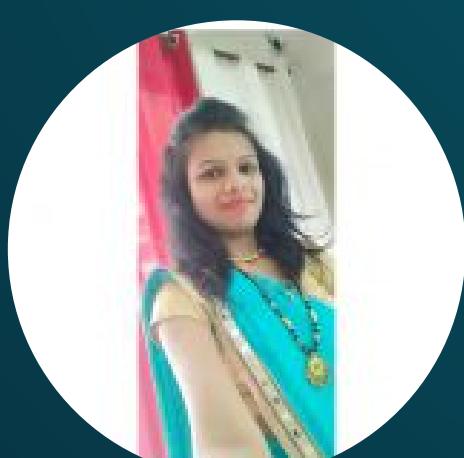
Mrs. Bharati Khatawate
M.E (ELECTRONICS)

Assistant Professor

Bhakti Aher
M.E (COMPUTER)

Assistant Professor

Ms. Mamta Chaudhary
M.E(COMPUTER)

Assistant Professor

CONFERENCE PUBLICATIONS

Sr. No.	Name of the Faculty	Title of the paper	Details of Publication
1	Dr. Lata Ragha	Secured and Quantum Resistant Key Exchange Cryptography Methods-A Comparison	International Conference on Interdisciplinary Research in Technology and Management,2022
		Blockchain Impact of Security and Privacy in Digital Identity Management	Book chapter-13, Blockchain for Information Security and Privacy, December 2021
		Analysis of CT Scan Lung Cancer Images using Machine Learning Algorithms	6th International Conference on Intelligent Computing and Control Systems, May 2022
		Abstractive Text Summarization for Multimodal Data	IC3SIS-22, SCMS SET Ernakulam, 23-25 June, 2022
		Analysis of Software Bug Prediction and Tracing Models from a Statistical Perspective Using Machine Learning	2nd International Conference on Intelligent Technologies, K. L. E. Institute of Technology, Hubballi, 24-26, June 2022
		Using Weakly Supervised Machine Learning Algorithms for Classification and Analysis of CT Scan Lung Cancer Images	2nd International Conference on Intelligent Technologies,
2	Mrs. Kiruthika M.	Virtual Dressing using Augmented Reality	International Conference on Automation, Communication and Computing (ICACC-2021),
		Legal Ledger - Blockchain In Judicial System	3rd International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2021)
3	Dr. Jyoti M.	Implementation of Multi-Channel Time To Digital Generator Using FPGA	2nd International Conference on Intelligent Technologies(CONIT) ,
		Leveraging the power of Blockchain in the health Insurance industry	2nd International Conference on Intelligent Technologies(CONIT) , 2022.
4	Mr. Amroz S.	Artificial Intelligence Surveillance System	International Conference on Computing, Communication, Security and Intelligent Systems (IC3SIS), 23-25 June 2022,

CONFERENCE PUBLICATIONS

5	Mrs. Smita D.	Develop a multilayered security approach to secure IoT enabled healthcare system	Conference on Technologies for Future Cities (CTFC 2021)
6	Mrs. Rakhi K.	Study on Design and Implementation of Distributed Multiple Camera Surveillance and Tracking System	2nd International Conference on Automation Computing and Communication (ICACC2021)
		An application to Improve Mental Health	2nd International Conference on Automation Computing and Communication (ICACC2021)
		Sky Detection in Outdoor Spaces	International Conference on Data Science and Artificial Intelligence (ICDSAI 2022) Indian Institute of Technology, Patna 24th-25th April ,2022
7	Ms. Shagufta R	Study on Design and Implementation of Distributed Multiple Camera Surveillance and Tracking System	2nd International Conference on Automation Computing and Communication (ICACC2021)
		An application to Improve Mental Health	2nd International Conference on Automation Computing and Communication (ICACC2021)
		Sky Detection in Outdoor Spaces	International Conference on Data Science and Artificial Intelligence (ICDSAI 2022)
8	Mrs. Dakshayani G.	Travel Booking and Management Application: TravelBel	Sixth International Conference on ICT for Sustainable Development (ICT4SD 2021),August 5-6, 2021
		An E-store for Farmers Buying Seeds	2nd International Conference on Intelligent Technologies(CONIT) , June 2022

JOURNAL PUBLICATIONS

Sr. No.	Name of the Faculty	Title of the paper	Details of Publication
1.	Mrs. Kiruthika M	Secured protection of transmission line by distance relay using data mining approach	Indonesian Journal of Electrical Engineering and Computer Science Vol. 23, No. 1, July 2021, pp. 1~13 ISSN: 2502-4752, DOI: 10.11591/ijeecs.v23.i1.pp1-13
2.	Mrs. Kavita	Trust-Aid (Blockchain-based Charity system	International Research Journal of Engineering and Technology (IRJET)Volume 09, Issue 03March 2022 e-ISSN:2395-0056 P-ISSN:2395-0072
		Air Scribble – Character Recognition Using Pen Tip	A Journal of Physical Sciences and Engineering and Technology , Samriddhi ,Volume No. 14, Issue-2, ,ISSN [P]2229-7111ISSN[O]24545767 ,April - June 2022
3.	Mrs.Padmashri Vijayave	Car Damage Assessment to automate Insurance Claim	International Research Journal of Engineering and Technology (IRJET), Vol. 9, Issue No. 3 (2021), ISSN (Online): 2395-0056, Mar 2022

PUBLICATIONS (TILL DATE)

SR.No	Faculty	National Conferences	International Conferences	International Journal
1.	Dr. Lata Ragha	17	61	56
2.	Mrs. M. Kiruthika	10	21	23
3.	Mr. Amroz S	02	01	11
4.	Mrs. Smita Dange	10	10	09
5.	Mrs. Rakhi Kalantri	09	13	13
6.	Mrs. Shagufta R	04	10	13
7.	Mrs. Dakshayani G	04	06	12
8.	Mrs. Kavita	01	03	14
9.	Mr. Mritunjay Ojha	01	05	13
10.	Mr. Rahul Jadhav	03	08	11

By Department of Computer Engineering

STUDENT ACTIVITIES

STUDENT PUBLICATIONS

Sr. No.	Student Name	Paper Title	Details
1.	Shrestha Sharma Nabhya Jha Nimal Nainan,	Consumer-Service Provider Connect	International Journal of Scientific Research & Engineering Trends Volume 7, Issue 4, July-Aug-2021, ISSN (Online): 2395-566X
2.	Sureshkumar Jha Rohan Sawant Parth Shinde	Study on Design and Implementation of Distributed Multiple Camera Surveillance and Tracking System	2nd International Conference on Automation Computing and Communication (ICACC2021)
3.	Mrunal Bhalerao Raj Salvi Trisha Lewis	An application to Improve Mental Health	2nd International Conference on Automation Computing and Communication (ICACC2021)
4.	Anish Patil Omkar Jadhav Jeffy Sam	Virtual Dressing using Augmented Reality	2nd International Conference on Automation Computing and Communication (ICACC2021)
5.	Evan Velagaleti Roshni Johnson Manali Patil	Object Detection at Crime Scene	Digital Forensics Journal, Vol.3, Issue 3, August 2021, Pg:21-25
6.	Arushi Sinha Elroy Gomes Tryambak Gour	Travel Booking and Management Application: TravelBel	Sixth International Conference on ICT for Sustainable Development (ICT4SD 2021),August 5-6, 2021
7.	Soumya Haridas, Shalu Saroj, Sairam Tushar Maddala	LegalLedger – Blockchain In Judicial System	3rd International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2021),RVS College of Engineering & Technology,Coimbatore,India ,Aug 20-21,2021.

STUDENT PUBLICATIONS

8.	Dheeraj Kallakuri, Nikhil Londhe, Sharon Laurance, Vinayak Kurup	M-Lens An IoT Based Deep Learning Device	Conference on Technologies for Future Cities (CTFC 2021) 2nd in the Series Pillai College of Engineering (PCE) 8th - 9th October, 2021
9.	Dhinakar Gogi Aditya Jadhav Nayan Shingare Joel Thomas	Stratergic tower defence game	International journal of Engineering and management research, Volume 11, Issue 3 of June 2021, ISSN (Online): 2250-0758
10.	Carvalho Rachel D'sa Flavia Tina Febeeta Alex Nadar Achsha	E-Prescription: A Medical Receipt Management	Journal of Advanced Database Management & Systems, Vol. 8, Issue No. 2 (2021), ISSN (Online): 2393-8730
11.	Siddhant Gole Pranay Gupta Gauri Patil	Car Damage Assessment to automate Insurance Claim	International Research Journal of Engineering and Technology (IRJET), Vol. 9, Issue No. 3 (2021), ISSN (Online): 2395-0056, Mar 2022
12.	B. Sai Sree Chiranya Gupta Yukta Thakur	Trust- Aid (Blockchain based charity system)	International Research Journal of Engineering and Technology (IRJET), Vol. 9, Issue No. 2 (2021), ISSN (Online): 2395-0072, Feb 2022
13.	Serena Raju Sherin Shibu Riya Mol Joel Thomas	Pragmatic Implementation of Reinforcement Algorithms for path finding on Rasberry Pi	International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), DOI: 10.1109/SCEECS54111.2022.9741018 ,19-20 February 2022IEEE
14.	Bhagyashree L. Rhea Handa, Simran Kalaskar,	Crop Recommendation & Price Forecasting through a Farming Assistance Portal	Accepted in Second International Conference on Signal & Data Processing (ICSDP) 2022 June 10 – 11 2022

CAMPUS PLACEMENT

Sr. No.	Company	No. of Offers	Pay Package
1.	TCS Ninja	15	3.36 LPA
2.	JPL	12	5/6/7 LPA
3.	Accenture	6	4.5 LPA
4.	TCS Digital	5	7 LPA
5.	Barclays	4	12.32 LPA
6.	CCIL	3	8.16 LPA
7.	DELOITTE	3	4.7 LPA
8.	LTI	3	5/4 LPA
9.	WTW	2	6 LPA
10.	COGNIZANT (GENC)	2	4 LPA
11.	SCIATIVE SOLUTIONS	2	9/7 LPA
12.	CARWALE	1	9
13.	DECIMAL POINT ANALYTICS (6)	1	6
14.	FORCEPOINT (14.5)	1	14.5
15.	LFTS (6)	1	6
16.	Maxval (4.2)	1	4.2
17.	QUICKSELL (21)	1	21

Total number of students placed : 46
Average Package : 6.4 LPA
Total number of offers : 63
(Including dual offers where students chose higher packages)

By Department of Computer Engineering

CAMPUS PLACEMENT

Quicksell (21 LPA)
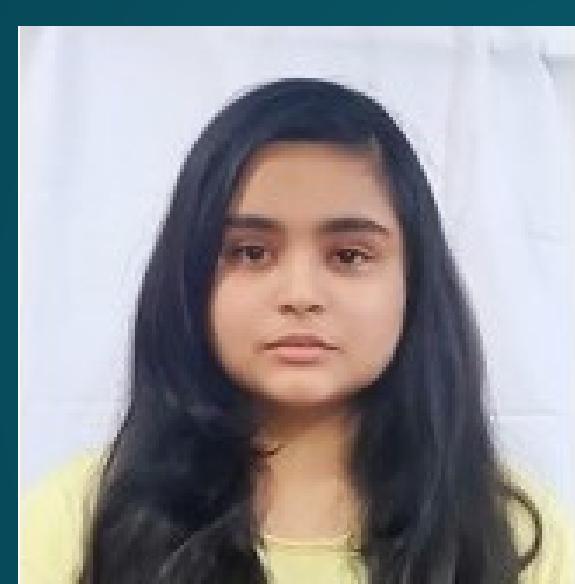
Gabriel Rajendran

Barclays (12.32 LPA)

Aakash Yadav   Shrestha Sharma   Loukik Raina   Trevor Dcosta
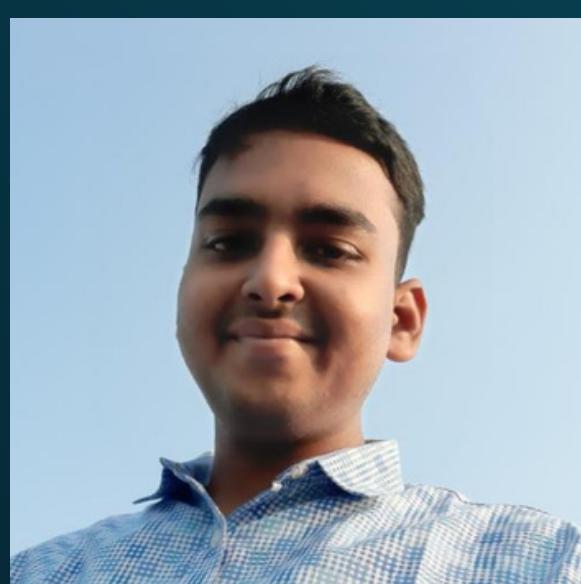
CCIL (8.16 LPA)

Farhan
Hyderabadwale   Sanchita Mehetre   Pranit Moge

Accenture (12.32 LPA)
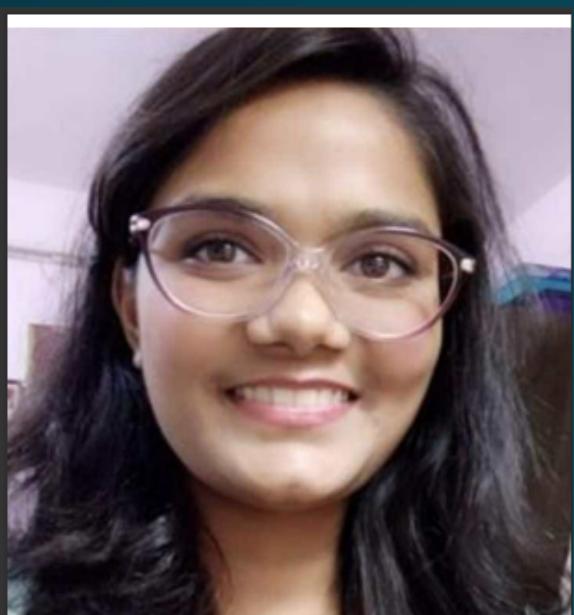
Divya Bajeria

Rachel Peter
Carvalho

Flavia Tina D'sa

Rishika Agarawal

Abhilasa Nayak

DELOITTE (4.7)

Konikkara Francis
Anthony

Vikas Varak

By Department of Computer Engineering

JPL(7)

GRAS ELISHA
HALONA EDWIN

SNEHAL SUNIL
TAGALPALLEWAR

JPL (6LPA)

Aditya
Unnikrishnan

Antony Bush

Abhishek
Chaoudhary

Gabriel
Rajendran
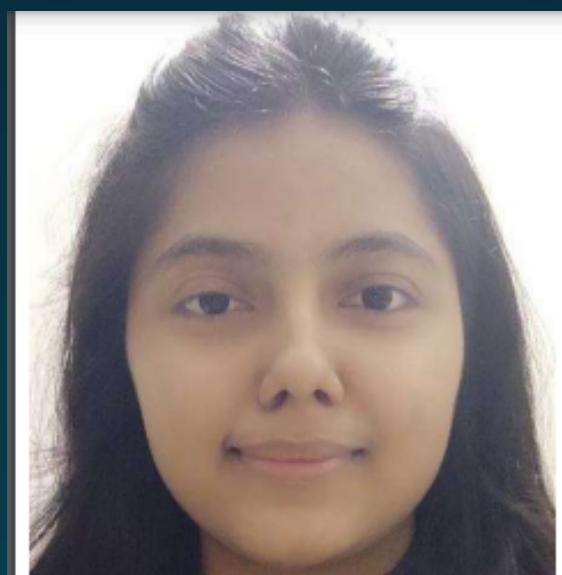
Kaliappan Yadav

JPL (5 LPA)

Bryan Francis

Nabhya Jha

Yashraj Mane

Aniruddha Salunkhe

Shrestha Sharma

TCS Digital (7 LPA)

Aditya Unnikrishnan

Abhishek Chaudhary

Akash U Dsouza

Shrestha Sharma

By Department of Computer Engineering

TCS Ninja (3.36 LPA)

Antony Bush
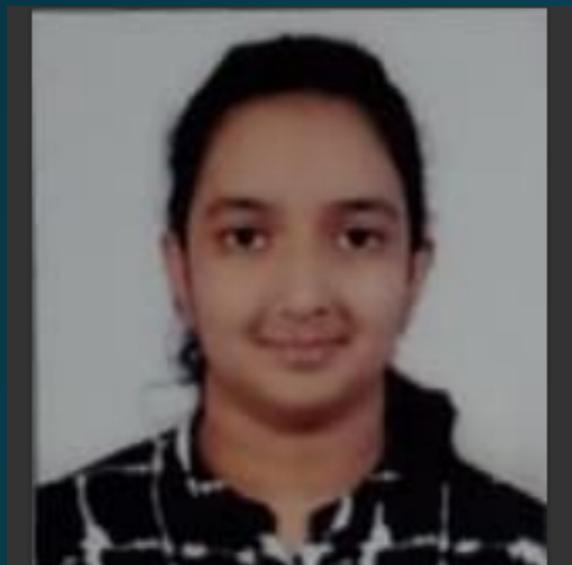
Divya Bajeria

Bryan Francis

Rachel Peter Carvalho

Shriya Sunil Deshmukh

Pratik Dhumal

Flavia Tina D'sa

Gregory Biju Geevarghese
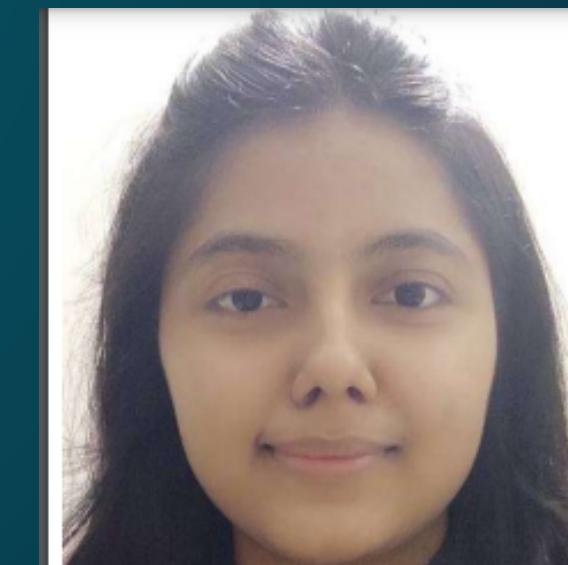
Darren Gonsalves

Jaydip Pravin Indap

Aditya Sambhaji Jadhav

Nabhya Jha

Trevor Dcosta

DECIMAL POINT ANALYTICS (6 LPA)

Shalom Jose Jesurajan

FORCEPOINT (14.5 LPA)

Kaliappan Yadav

WTW (6 LPA)

Jaydip Pravin Indap

SELVA LEANDER

FCRIT

By Department of Computer Engineering

LTI (4 LPA)

Rishika Agarwal

Edwin VIncent

COGNIZANT (GENC)
(4 LPA)

Najuka Borse

Febeeta Alex

Maxval (4.2 LPA)

Tushar Gupta

CARWALE (9 LPA)
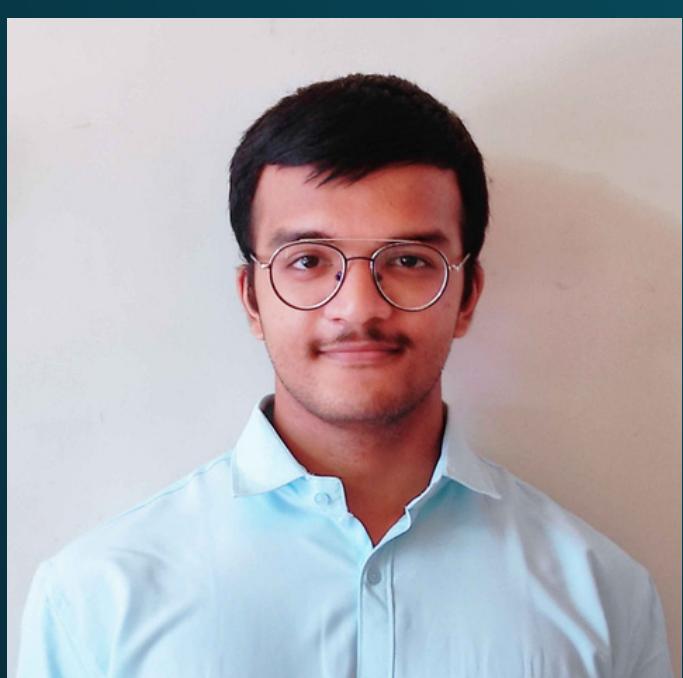
Abhishek Chaudhary

SCIATIVE SOLUTIONS (7 LPA)

Darren Gonsalves

SCIATIVE SOLUTIONS (9LPA)
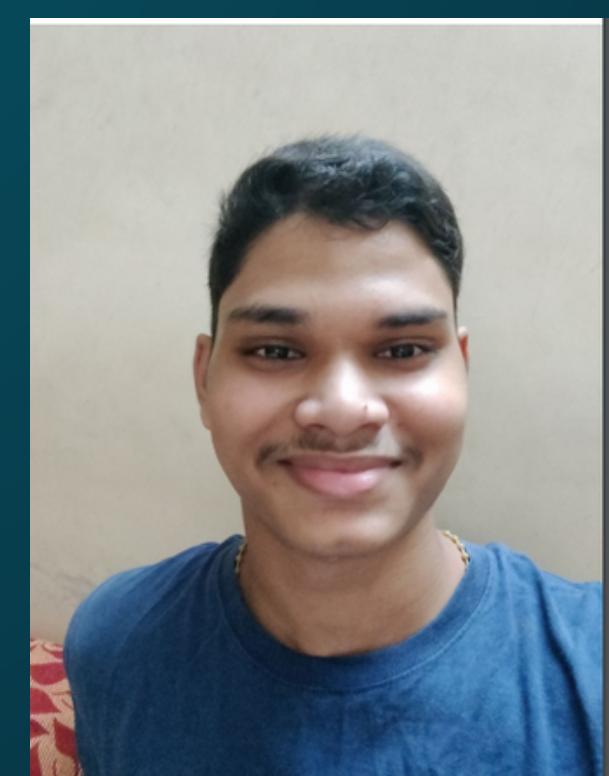
Yashraj Mane

LFTS (6 LPA)

Edwin VIncent

LTI (5 LPA)

Alroy Serrao

FCRIT

By Department of Computer Engineering

FINAL YEAR - (2019-2023)

THIRD YEAR - (2020-2024)

COMP A

COMP B

SECOND YEAR - (2021-2025)

COMP A

COMP B

INDUSTRIAL VISIT

Second Year Students Industrial Visit to TCS – Thane

Third Year Student's Industrial Visit to MTNL – Powai (Comp A)

INDUSTRIAL VISIT

Third Year Student's Industrial Visit to MTNL – Powai (Comp B)

Fourth Year Student's Industrial Visit to HELIK Advisory- MMCT

CSI- Computer Engineering FH -2023

Sr. No.	CSI Event/ Workshop	Speaker(s)/ Winner(s)	Converner/ Co-ordinator
1.	CRYPTEX WORKSHOP 2022	**Cryptex Top Scorers:** **Python:** Jayesh Chaudhari Mansi Kumbhar **AIML:** Niranjan Khurade Shreyash Deshpande **Web Dev:** Tahir Shikalgar Darren Dsouza **Linux:** Ian Thomas Jim Royston	Ms. Snehal Nikalje & Mrs.Shagufta K
2.	ACCESS SH-2022	Mr. Gaurav Batra, Founder and CEO of CYBERFRAT DR. KETANA MATKAR Founder and managing Director of CIPHER Environment Solutions LLP. DR. Climate reality expert with a PhD in microbiology. Mr. Himanshu Arora Founder and CEO, Dimensionless Technologies Mr. Santosh Deshpande General Manager HR, Schneider Electric India Pvt Ltd.	Ms. Snehal Nikalje & Mrs.Shagufta K

Sr. No.	CSI Event/ Workshop	Speaker(s)/ Winner(s)	Converner/ Co-ordinator
3.	TECHNOBLITZ Poster Presentation Competition	Judges: Mr. Himanshu Arora Mr Karan Balkar Winners: 1st Prize: Loukik Raina Shriya Deshmukh 2nd Prize: Kaliappan Snehal Bhairavi Desai Saniya Binoy	Ms. Snehal Nikalje & Mrs.Shagufta K
4.	INNOVATE-X Technical Paper Presentation	Judges: Mr. Nitin Tiwari Dr.Chhaya Pawar Winners: 1st Prize- Baniz Michael Kshitij Chorge Shriyans Bhalchandra Murari Amey Santosh Tamhankar 2nd Prize- AJINKYA DESHPANDE SUSHANT DAWARE DISHA KAW PALAK WADHWA 3rd prize- Aditya Yempalle Karishma Rajput Mahima	Dr.Chhaya Pawar & Ms. Snehal Nikalje
5.	Online Hackathon- TECHNIGHT	Judge: Mr. Karan Balkar Winners: First place: Abhinav and Varun (Kimi no) Second place: Aditya Rai and Sarthak Deshmukh, Karandeep Singh Sanghu,Faizan potrick (AFK) Third place(Best UI): Vedant Prabhu , Jayneel Manish Kanungo (team alpha)	Dr.Chhaya Pawar & Ms. Snehal Nikalje

CSI- Computer Engineering SH-2022

ACESS

CRYPTEX WORKSHOP

CSI- Computer Engineering SH-2022

INNOVATE-X

TECHNOBLITZ

ARTICLES

Open Source: Your Gateway to Collaboration and Innovation

Are you interested in coding and software development? If so, you must have heard about open source software. In simple terms, it is a software development model where the source code of a program is made publicly available for anyone to view, modify, and distribute. It is the collaborative effort of a community of developers who come together to create a software that is free to use, share and distribute.

In this article, we will discuss the basics of open source software, its importance, and how you can contribute to the community.

What is Open Source Software?

Open source software refers to a program whose source code is made available to the public. Anyone can access, use, and modify the code for any purpose. Open source software is built by a community of developers who work together to improve the software.
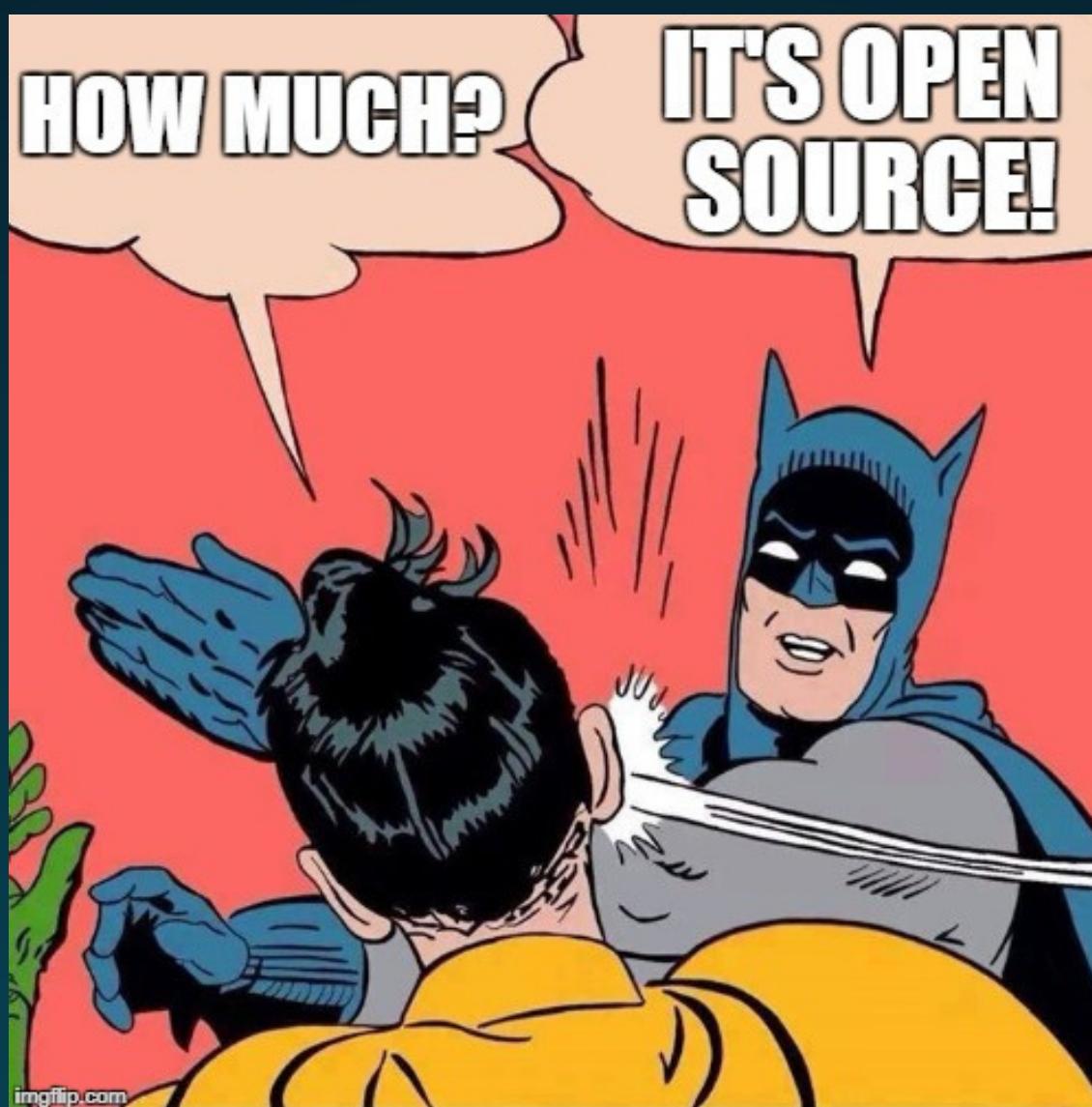
Why is Open Source Important?

Open source software provides a platform for developers to collaborate and innovate. It enables the sharing of knowledge and ideas, which leads to the creation of better software. The community-driven development model ensures that the software is continuously improved and updated. It also allows for customization and flexibility, making it easier to adapt to changing needs.

How Can You Contribute to Open Source?

Contributing to open source software is easier than you might think. Here are a few ways to get started:

- Report bugs: If you encounter any bugs or issues with an open source software, report it to the community. This helps developers identify and fix the problem.
- Improve documentation: Open source software documentation is usually maintained by volunteers. You can contribute by improving the documentation, fixing typos, and adding missing information.
- Create tutorials: Help new users get started with the software by creating tutorials and guides.
- Contribute code: If you have programming skills, you can contribute code to the project. Start with small fixes and work your way up to bigger features.
- Donate: Open source software is developed by volunteers who give their time and skills. You can support the project by donating money or resources.

The Benefits of Contributing to Open Source

By contributing to open source software, you gain more than just technical skills. Here are some of the benefits of contributing to open source software:

- Improve Your Technical Skills: Contributing to open source software allows you to work on real-world projects, improve your coding skills, and learn from experienced developers.
- Expand Your Network: Open source communities are made up of people from all over the world. By contributing to open source software, you can connect with other developers and expand your network.
- Gain Experience: Contributing to open source software gives you practical experience in software development. This experience can be used to build your resume and increase your chances of getting hired.
- Learn New Technologies: Open source software is built using a variety of technologies. By contributing to open source software, you can learn new technologies and expand your skillset.
- Make a Difference: Contributing to open source software is a great way to make a difference in the world. Open source software is used by millions of people, and your contributions can help improve the lives of others.

In conclusion, contributing to open source software is a great way to gain experience, improve your skills, and make a difference in the world. Whether you're a beginner or an experienced developer, there are many ways to contribute to open source software. So, what are you waiting for? Join the open source community today and start contributing.

Savio Dias
BE Computer
Semester 4

The Growing Importance of Cybersecurity in a Digitally Connected World

As our world becomes increasingly reliant on technology, the importance of cybersecurity has never been more critical. Cyber threats are constantly evolving, and companies and individuals alike must take proactive measures to protect their digital assets. In this article, we'll explore the growing importance of cybersecurity in a digitally connected world.

Why is Cybersecurity Important?

Cybersecurity is essential to protect against a range of threats, including data breaches, identity theft, and cyber attacks. The potential impacts of a cyber attack can be severe, including financial losses, reputational damage, and even legal consequences. In addition, the increasing digitization of our lives means that the potential attack surface is growing, making cybersecurity a top priority.

Cybersecurity Threats

There are a range of cybersecurity threats that individuals and companies should be a

1. <u>Malware</u>: Malware is a type of malicious software that is designed to harm or disrupt computer systems. This can include viruses, trojan horses, and spyware.
2. <u>Phishing</u>: Phishing is a type of social engineering attack in which an attacker poses as a trustworthy entity to gain access to sensitive information such as login credentials or financial information.
3. <u>Ransomware</u>: Ransomware is a type of malware that encrypts a victim's files, and demands payment in exchange for the decryption key.
4. <u>Distributed Denial of Service (DDoS) attacks</u>: DDoS attacks involve overwhelming a system with traffic, rendering it unavailable for legitimate users.

Protecting Against Cybersecurity Threats

To protect against cybersecurity threats, individuals and companies must take proactive measures, including:

1. <u>Strong Passwords</u>: Strong, unique passwords should be used for all accounts and changed regularly.
2. <u>Software Updates:</u> Regular software updates can patch security vulnerabilities and prevent attackers from exploiting them.

Other measures:
1. <u>Two-Factor Authentication:</u> Two-factor authentication adds an extra layer of security by requiring a second form of authentication, such as a text message or biometric verification.
2. <u>Employee Training:</u> Employees should be trained on how to identify and avoid cybersecurity threats, including phishing attacks.

Conclusion

In a digitally connected world, cybersecurity is more important than ever. By understanding the threats and taking proactive measures to protect against them, individuals and companies can reduce their risk and maintain the security of their digital assets.

Tejashree Bhangale
BE Computer
Semester 4

The Future of Artificial Intelligence: Opportunities and Challenges

Artificial intelligence (AI) is a rapidly evolving field that has the potential to transform various industries. From healthcare to finance, AI has the ability to improve efficiency, accuracy, and productivity. However, with this potential comes a range of challenges that must be addressed to ensure that AI is used in a responsible and ethical manner.

What is Artificial Intelligence?

Artificial intelligence refers to the ability of machines to perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation. AI involves the use of algorithms and statistical models to analyze large amounts of data and make predictions or decisions based on that data.

Opportunities of AI

1. Improving Healthcare: AI has the potential to revolutionize healthcare by improving diagnoses and treatment options. Machine learning algorithms can analyze large amounts of medical data to identify patterns and predict outcomes. This can lead to earlier detection of diseases and more personalized treatment plans. Additionally, AI can be used to develop more efficient healthcare systems. For example, AI-powered robots can perform repetitive tasks, freeing up medical professionals to focus on more complex tasks.

2. Enhancing Customer Service: AI can improve customer service by providing faster and more accurate responses to customer inquiries. Chatbots can be used to provide 24/7 customer support and answer frequently asked questions. This can reduce wait times and improve customer satisfaction.Additionally, AI can be used to analyze customer data to personalize recommendations and offers. This can lead to increased customer loyalty and higher sales.

3. Increasing Efficiency in Manufacturing: AI can be used to automate repetitive and mundane tasks in manufacturing. This can increase efficiency and reduce costs. For example, AI-powered robots can be used to assemble products or perform quality control checks. Additionally, AI can be used to optimize supply chain management. Machine learning algorithms can analyze data to predict demand and optimize inventory levels.

Challenges of AI

1. <u>Bias in AI:</u> One of the biggest challenges of AI is bias. Machine learning algorithms are only as good as the data they are trained on. If the data is biased, the algorithm will be biased as well. For example, if a facial recognition algorithm is trained on data that is predominantly male, it may have difficulty recognizing female faces. This can lead to discriminatory outcomes. To address this challenge, it is important to ensure that the data used to train AI algorithms is diverse and representative of the population.

2. <u>Lack of Transparency:</u> Another challenge of AI is the lack of transparency. Many AI algorithms are considered black boxes, meaning that it is difficult to understand how they arrived at their decision.This can be problematic in industries where decisions have significant consequences, such as healthcare and finance. Without transparency, it is difficult to ensure that decisions are fair and unbiased. To address this challenge, efforts are being made to develop AI algorithms that are more transparent and explainable.

3. <u>Job Displacement:</u> AI has the potential to automate many jobs that are currently performed by humans. This can lead to job displacement and economic disruption. To address this challenge, it is important to invest in education and training programs that prepare workers for the jobs of the future. Additionally, policymakers must consider strategies for supporting workers who are displaced by AI.

Conclusion

Artificial intelligence has the potential to transform various industries and improve our lives in many ways. However, it is important to address the challenges of AI to ensure that it is used in a responsible and ethical manner. By addressing issues such as bias, lack of transparency, and job displacement, we can ensure that AI benefits everyone and helps to create a more equitable and sustainable future.
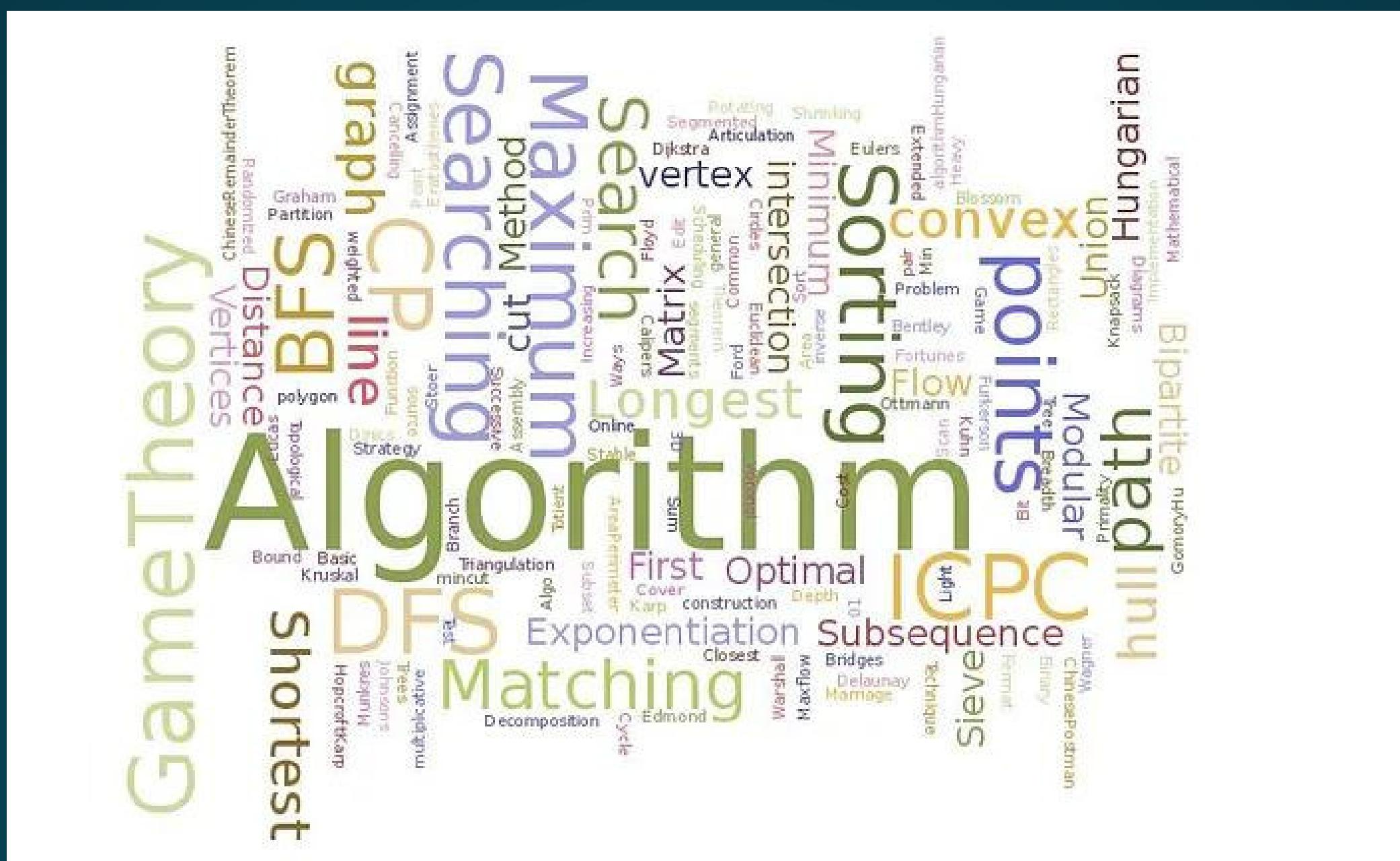
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Semester 4

A Gallery of Stunning Algorithms

Examining the Complexity and Artistry of Programming

Introduction

Writing attractive, effective, and efficient code involves a tremendous deal of beauty and imagination, despite the common misconception that programming is only a functional activity. We'll take a look at some of the most beautiful programming algorithms in this post, exhibiting their elaborate designs and demonstrating the artistry that can be found in code.

Algorithms for Sorting

In computer science, sorting algorithms are among the most fundamental and frequently used ones. They can also be among the most aesthetically pleasing. Some of the most beautiful and effective sorting algorithms, such as quicksort, mergesort, and heap sort, will be demonstrated.

Fractal algorithm

Fractals are mathematical patterns that recur at various scales and are frequently utilised in simulations and computer graphics. With the aid of visuals and animations that vividly depict their intricate details, we'll examine some of the most stunning and hypnotic fractals, such as the Koch curve, the Sierpinski triangle, and the Mandelbrot set.

Algorithms for Artificial Intelligence

In order to power anything from speech recognition to self-driving cars, artificial intelligence (AI) algorithms are used, and they are frequently among the most difficult and complex algorithms to design and apply. With examples that show their practical applications, we'll highlight some of the most outstanding and inventive AI algorithms, including deep learning and reinforcement learning.

Algorithms for Graphics

Everything from video games to movies to virtual reality experiences uses graphics algorithms to produce breathtaking visual effects. We'll examine some of the most spectacular and captivating graphics algorithms, including ray tracing and particle systems, and show off their prowess in images and movies.

Conclusion

The discipline of programming is one that is both exciting and gratifying, and it provides countless chances for ingenuity and creativity. We wish to encourage readers to explore the artistry of code and learn about the countless opportunities that are available by presenting both the simplicity and elegance of some of the most beautiful algorithms in programming.

Jiol Simon
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Semester 4

Visualizing the Future of AR and VR: Applications and Opportunities

Subheading: Exploring the Potential of Augmented and Virtual Reality

Introduction:

Augmented reality (AR) and virtual reality (VR) are two of the most exciting and rapidly evolving technologies today, with countless applications across a wide range of industries. In this article, we'll take a visual tour of the possibilities that AR and VR present, showcasing some of the most promising and innovative use cases and highlighting the ways in which these technologies are transforming the world around us.

Section 2

AR in Retail AR is already being used in innovative ways in the retail industry, from virtual try-on experiences to in-store navigation. We'll showcase some of the most compelling examples of AR in retail, with images and videos that illustrate how AR is enhancing the shopping experience and changing the way we interact with products.

Section 2:
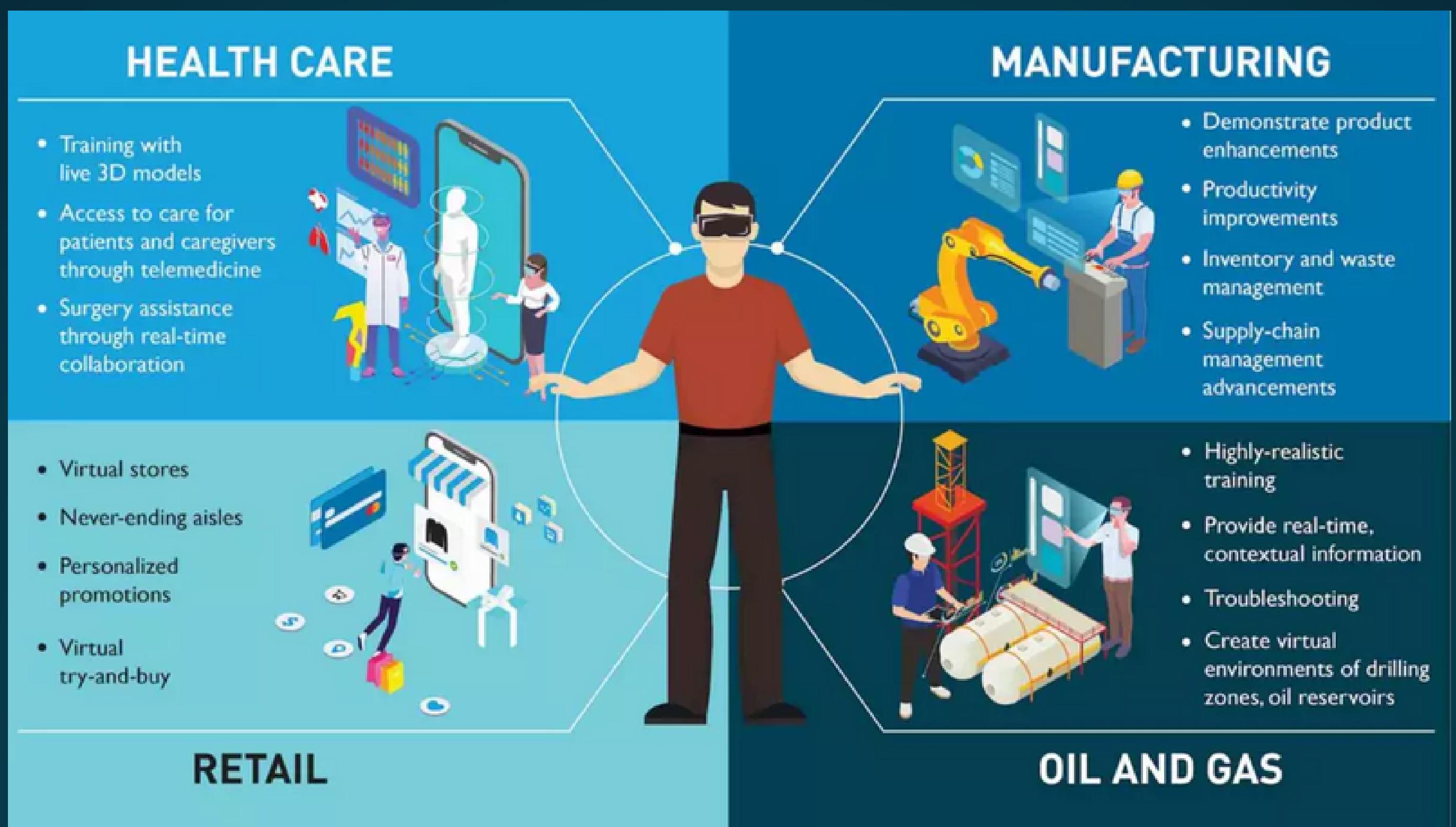
VR in Education Virtual reality is revolutionizing the way we learn, enabling immersive and interactive educational experiences that are more engaging and effective than traditional classroom instruction. We'll explore some of the most exciting and innovative applications of VR in education, including virtual field trips, anatomy simulations, and language learning programs.

Section 3

AR and VR in Healthcare AR and VR are also transforming the healthcare industry, with applications ranging from surgical training to patient rehabilitation. We'll showcase some of the most innovative and inspiring use cases of AR and VR in healthcare, including patient education, medical imaging, and pain management.

Section 4:

AR and VR in Entertainment AR and VR are changing the way we experience entertainment, with immersive experiences that transport us to new worlds and create unforgettable memories. We'll explore some of the most exciting and creative examples of AR and VR in entertainment, including virtual concerts, theme park attractions, and interactive storytelling.

Conclusion

AR and VR are still in their early stages, but the possibilities they present are limitless. By showcasing some of the most innovative and inspiring applications of these technologies, we hope to inspire readers to explore the potential of AR and VR and discover the endless opportunities that await them.

Darren Dsouza
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Semester 4

Web Development: A Comprehensive Guide to Building Modern Websites

Introduction

Web development is the process of building websites and web applications using a variety of programming languages, frameworks, and tools. In this comprehensive guide, we'll provide an overview of the key concepts and technologies involved in web development, along with practical tips and best practices for building modern, responsive, and user-friendly websites.

Front-End Development

Front-end development is the process of building the user interface of a website, including the layout, design, and interactivity. We'll explore the key technologies used in front-end development, including HTML, CSS, JavaScript, BOOTSTRAP, and popular front-end frameworks such as React, Angular, and Vue.js. We'll also cover best practices for responsive design, accessibility, and performance optimization.

Back-End Development

Back-end development is the process of building the server-side of a website, including the database, server, and application logic. We'll explore the key technologies used in back-end development, including popular server-side programming languages such as Node.js, PHP, and Python, and frameworks such as Express, Laravel, and Django. We'll also cover best practices for security, scalability, and performance optimization.

Full-Stack Development

Full-stack development is the process of building both the front-end and back-end of a website, using a combination of front-end and back-end technologies. We'll explore the key concepts and best practices of full-stack development, including choosing the right tools and frameworks, managing data, and integrating third-party APIs.

DevOps and Deployment

DevOps is the process of automating and streamlining the development, testing, and deployment of web applications. We'll explore the key technologies and best practices of DevOps, including continuous integration and deployment (CI/CD), containerization, and cloud hosting services such as AWS, Azure, and Google Cloud Platform.

Conclusion

Web development is an exciting and constantly evolving field, with new technologies and best practices emerging all the time. By providing a comprehensive overview of the key concepts and technologies involved in web development, along with practical tips and best practices, we hope to inspire readers to explore the possibilities of building modern, responsive, and user-friendly websites.
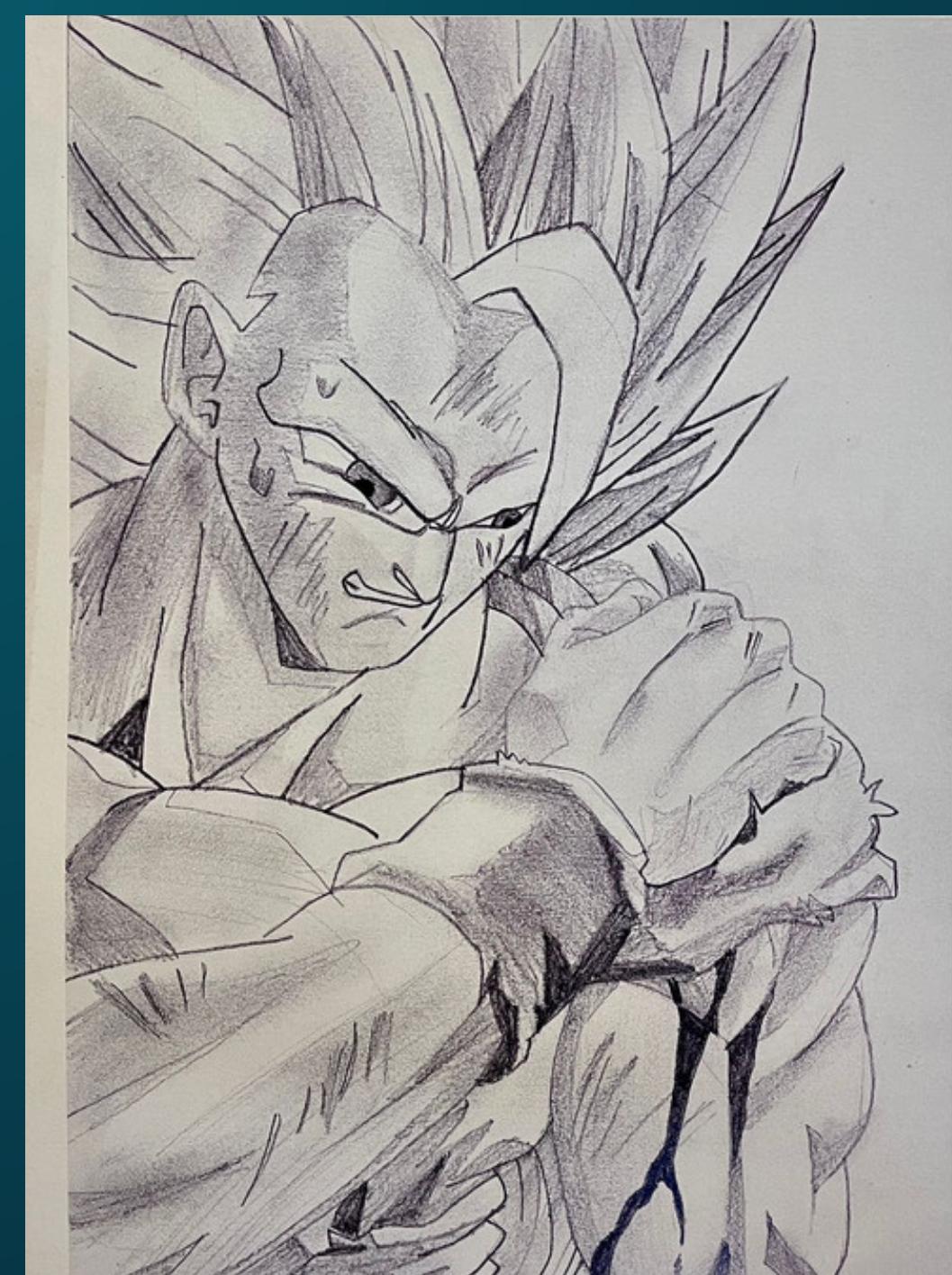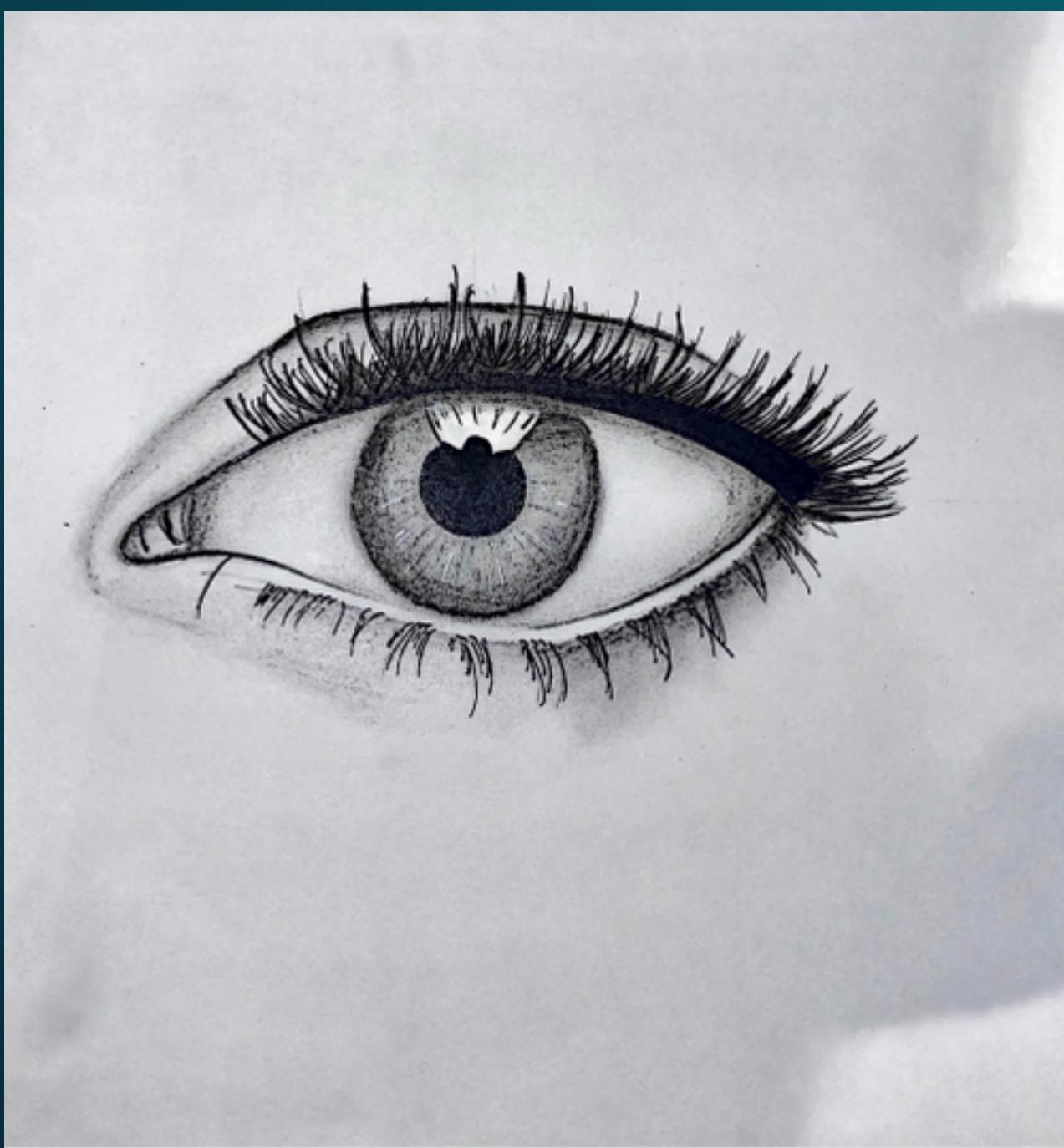
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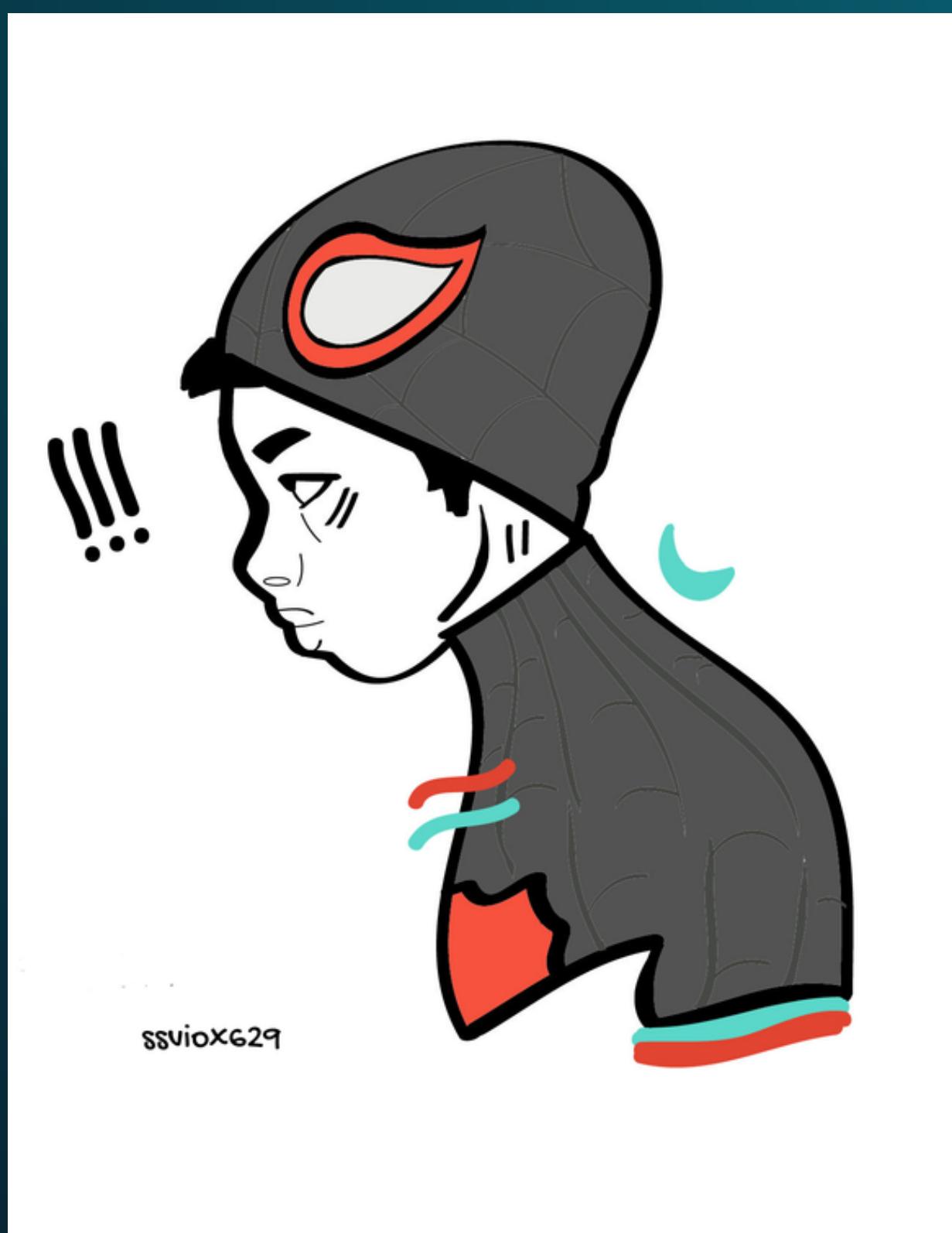
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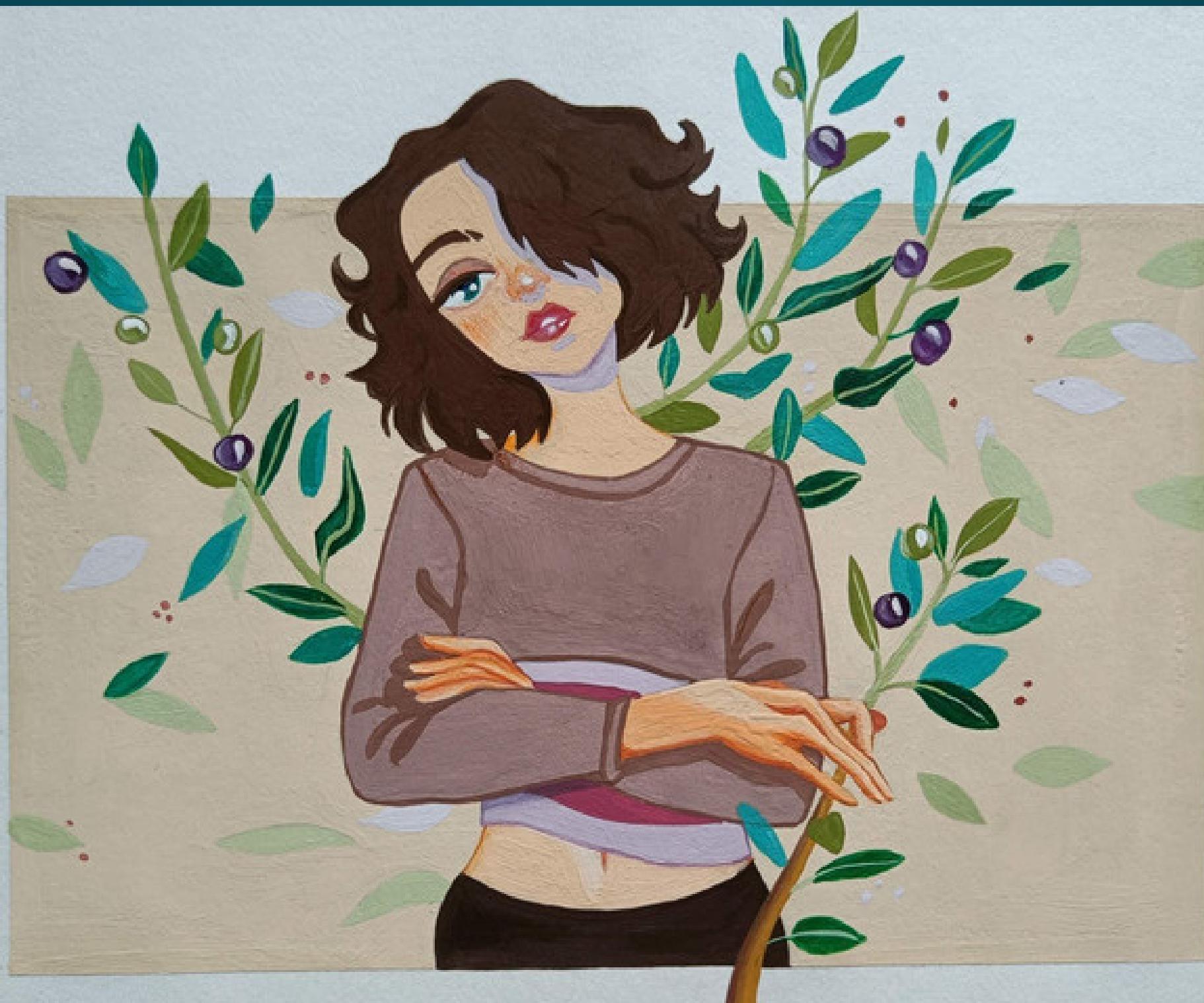
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ALUMNI SECTION

Alumni Note

Dear agnelites,

As I write this note I'm strolling down the memorylane and feeling super nostalgic. So, I joined Fr. CRITin 2018 as a teenager and in the year 2022 I graduated as an adult, in all its literal and metaphorical sense.
My day wouldn't begin without attending the morning assembly and vibing to the 'Hall of Fame'. Being an agnelite comes with certain predefined tags of discipline, studious, punctuality, and knowingly or unknowingly these tags prove to be true as we graduate and bid adieu.

One of the main highlights of Agnels is their faculty, the teachers are extremely dedicated and passionate that they put us through re-tests and re-prelims just so that we don't fall on our knees during end sems. I know all of this doesn't make any sense at the time and we get all frustrated about it, but trust me when we walk out of that gate as a graduate, it'll all come back to you and you'll be able to join the dots.

Apart from academics the college focuses on the holistic development of a student by providing us various forums to try new things and nurture any particular interest of ours. I'd tried my hand at almost everything in college and have been a part of almost every club. From being a part of CSI to being one of the founding members of our music club, Rhythm; the exposure I got through all of this was immense and no textbook education can give you that. So, I'd say try and get involved in things happening at college, be part of clubs, participate in events during Etamax, Faces because all of these builds your confidence, makes you self-aware, it unleashes sides of you that you probably didn't even know existed.

Now, the most beautiful perk of doing all this is that you get to meet some wonderful people across departments and years and you get to make friends for life. I strongly believe people are your biggest investment, so find those who bring out the best in you and keep them close. Some friendships last for a season while some are so seasoned that they'd last for seasons to come, and I personally was truly blessed to have made some amazing friends here, from seniors to juniors to batchmates and I will cherish those bonds forever.

By Department of Computer Engineering

My major takeaways from Agnels are the experiences, friends, memories and ofcourse the degree. I'm extremely grateful to my alma mater for the educational excellence and unrestricted support from teachers and peers that allowed me to recognize my professional and personal strengths. Lastly, I'd like to wish all of you the very best for your journey in Agnels. Don't hesitate to ask for help or voice your concerns, stay curious and shamelessly ask questions. Also, most importantly, don't forget to have fun amidst all the chaos, so that when you look back to your days in college you've got a couple of stories under your sleeve to laugh and reminisce about.
Cheers.

Best regards,
Jennifer James

Alumni Note

I started my journey at Fr. Agnel as a 5-year-old,
not knowing what life had in store.
Now, here I am, writing this note as an alumnus of the engineering college!
It sure has been an interesting ride. Over the course of these years, the two main things I've imbibed as an Agnelite are resilience and discipline. The coursework was tough, the assignments were demanding, and the schedules were tight, but it taught me the importance of hard work and never giving up. With the constant support of faculty and friends, I learned to push myself beyond my limits and embrace challenges as opportunities to grow. The environment taught me to stay strong in the face of setbacks and equipped me with the resilience I needed to tackle whatever came my way.
To all the current students, I would say, "stay hungry, stay foolish". Keep learning, tinkering, and challenging yourself. To my teachers, I would like to express my deepest gratitude for always being encouraging and supportive. To Fr. Agnel, I am immensely grateful for the education, opportunities and support I've received through the years. To end on an inspiring note, here's something for all the budding computer engineers, with some help from none other than ChatGPT.

For those studying CS with glee,
Unleashing their passion, wild and free.
With algorithms they play,
Coding night and day,
Building a tech world for all to see!
We live in exciting times with technology accelerating rapidly. Very excited to see what all of you build in
the future!

Sanjana Pradhan
B.E. Computer Engineering (2017-2021)
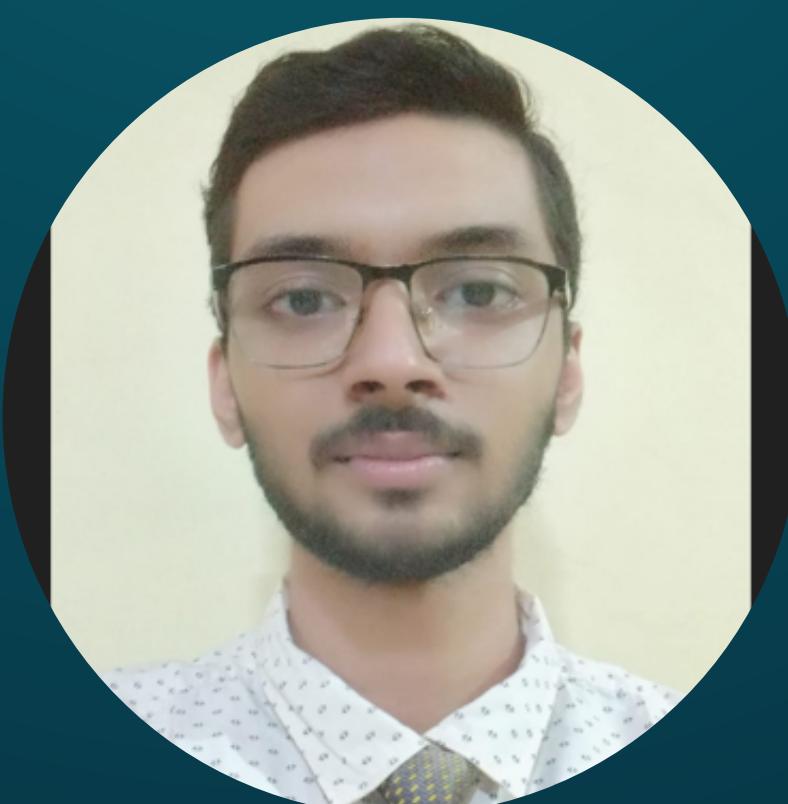
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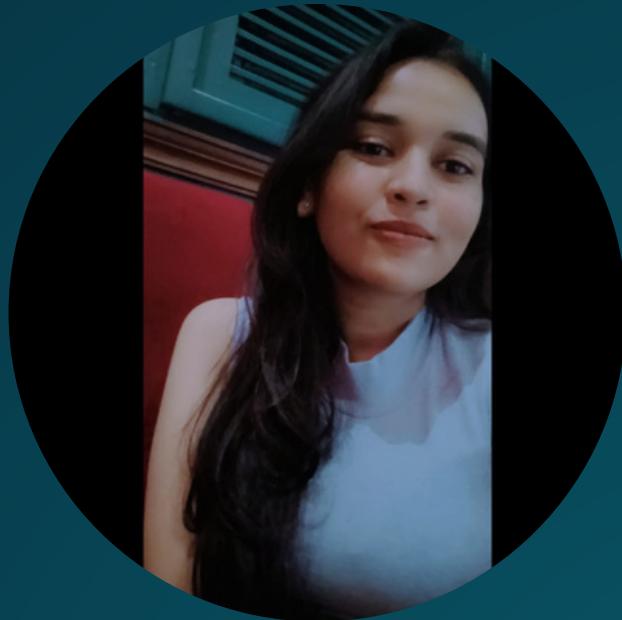
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