



**M.O.P. VAISHNAV COLLEGE FOR WOMEN (Autonomous)**  
(College Affiliated to University of Madras & Re-accredited at "A++" Grade by NAAC)  
Chennai - 600 034



**BACHELOR OF COMPUTER APPLICATIONS  
(B.C.A.)**

3 -Year Undergraduate Programme



## PROGRAMME OVERVIEW

B.C.A., established at M.O.P. Vaishnav College for Women in 1999, has been empowering women in technology for over 25 years by honing their expertise in programming, analytics, organization, and management skills, while maintaining a balanced focus on technical proficiency and essential soft skills. The Silver Jubilee of B.C.A. marks a legacy of academic excellence, innovation, and transformative education, fostering skilled professionals in the evolving field of computer applications. A key highlight of the programme is its consistent ranking among India's top institutions, securing the 43rd position among the top 110 B.C.A. institutes for three consecutive years. It has also received the Best Colleges Award 2024 for Excellence in B.C.A. Education from GHRDC and achieved the 56th national rank in the IIRF 2025 Ranking for the best private B.C.A. colleges.

The unique strength of B.C.A. at M.O.P. lies in its ability to combine technical expertise with essential skills in communication, teamwork, and leadership, empowering women with in-demand skills in emerging technologies to develop sustainable, global software solutions. By blending technical acumen with soft skills, the programme nurtures versatile professionals equipped to excel in the fast-paced IT industry.



BCA						
RANK 2025	TOP 110 INSTITUTES	ACADEMIC & RESEARCH EXCELLENCE	INDUSTRY INTERFACE & PLACEMENT	INFRASTRUCTURE & FACILITIES	GOVERNANCE & ADMISSIONS	DIVERSITY & OUTREACH
		250	200	200	200	150
35	MAHARANI LAKSHMI AMMANI COLLEGE FOR WOMEN, BANGALORE	184.39	92.64	110.26	115.3	36.30
36	ST JOSEPH'S COLLEGE, TRICHY	167.17	3.64	179.91	132.1	53.14
37	ACHARYA MOTIBHAI RATIL INSTITUTE OF COMPUTER STUDIES, CHANAY UNIVERSITY, KOREGA	168.32	28.06	173.01	144.73	17.36
38	UNIVERSITY INSTITUTE OF COMPUTING, CHANDIGARH UNIVERSITY, MOHALI	118.52	80.42	150.06	133.74	45.53
39	SIVANANDA SARMA MEMORIAL RV COLLEGE, BANGALORE	182.63	22.1	196.74	134.12	10.60
40	PARIJUL INSTITUTE OF COMPUTER APPLICATION, VADODARA	166.03	34.21	172.12	127.09	19.05
41	SRI RAMAKRISHNA COLLEGE OF ARTS AND SCIENCE FOR WOMEN, CHENNAI	161.66	41.24	155.91	119.21	39.09
42	SRI KRISHNA ARTS AND SCIENCE COLLEGE, COIMBATORE	171.21	28.97	151.09	139.86	25.5
43	MOP VAISHNAV COLLEGE FOR WOMEN, CHENNAI	161.71	22.19	166.9	151.03	12.89
44	DR S N S RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE, COIMBATORE	165.27	12.42	172.5	118.57	44.59
45	BISHOP HEBER COLLEGE, TRICHY	177.79	1.58	146.59	155.24	31.70



## ELIGIBILITY

XII grade students with Mathematics / Business Mathematics / Computer Science / Computer Application can apply for the programme.

## B.C.A. PROGRAMME CURRICULUM

**The Bachelor of Computer Applications (B.C.A.) is a three-year undergraduate programme comprising six semesters.**

The curriculum includes foundational courses like Language and English in the first year. Core courses focusing on skill development, employability, and entrepreneurship. Students are encouraged to enroll in self-learning courses to promote independent learning. The syllabus is frequently revised to incorporate the latest technologies and stay relevant to industry trends.

### ***COURSES FOCUSING ON SKILLS***

Python Programming	Digital Principles and Computer Organization	Mathematics for Computer Applications
Data Structures using C	Statistics for Computer Applications	Operating Systems with Unix
Programming in JAVA	Optimization Technique Using Open Source Tool	Data Communication and Networks
XML & its Applications	Advanced Programming in JAVA	

### ***COURSES FOCUSING ON EMPLOYABILITY***

Database System Concepts	Artificial Intelligence	Data Mining
Software Testing	Business Intelligence	Software Engineering with DevOps
Machine Learning with TensorFlow	High Performance Computing	Fundamentals of Accounting with Tally

### ***COURSES FOCUSING ON ENTREPRENEURSHIP***

PHP & MySQL	Cyber Security
Fundamentals of Cost & Management Accounting with Tally	Web Programming



**The course structure and curriculum are subject to modifications based on university regulations and academic requirements.**



## PROGRAMME EVENTS

Beyond the curriculum, the program organizes various events to help students gain practical skills, industry exposure, and insights into emerging technologies. The following events are conducted in order to bridge the gap between academics and real-world applications while enhancing career prospects and innovation.

**WORKSHOPS** on current topics like Embedded System for IoT Applications, Full Stack Development, Cyber Security and Ethical Hacking are organized to provide students with hands-on experience.

**GUEST LECTURES** on latest topics like Lamp Technology, Revolutionizing Industries: The Power of Machine Learning and AI, Scope of Technopreneurs in IT and ITES Sector are conducted by experts from industry.

**WEBINARS:** A series of webinars are conducted by the programme to enhance knowledge such as Technology management in Healthcare, Low code No code, Artificial Intelligence and Machine Learning.

**RESEARCH INITIATIVES:** Students of B.C.A. under the guidance of staff members have published research papers on latest trending topics in various International and National conferences and have publications in UGC Listed and Scopus-indexed journals.

**ICCCMIT:** An International Conference on Communication, Computing and Information Technology (ICCCMIT) is organized by the department of Computer Science and Information technology, providing a platform for academia, research scholars and professionals from industry as well as students to discuss, share and disseminate innovative views on recent trends and development in communication, computing and information technology. So far, six international conferences have been held in the year 2012, 2014, 2017, 2019, 2022 and 2024.



## INFRASTRUCTURE

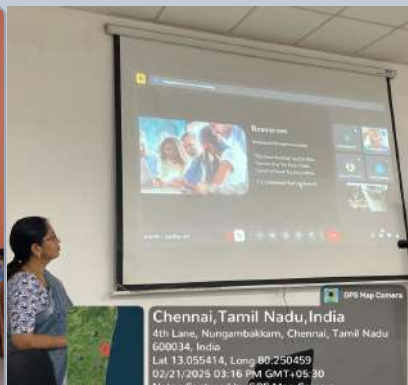
The department features four well-equipped computer labs with the latest and updated software, including eclipse, tableau, machine learning and deep learning libraries, hadoop, mongoDB, cassandra, and more. It also offers smart classrooms and Wi-Fi connectivity.

## STUDENT LED ACTIVITIES

**MINISTRY:** The M.O.P. Student Cabinet has various ministries, and the B.C.A. programme handles the “**Social Welfare Ministry**”. Through this initiative, students support community development by organizing digital literacy programme, environmental projects, and outreach activities.

**CLUB:** Students of the B.C.A. programme come together to organize various events as a part of the department club, “**The Hash Club**”. These events enhance technical skills, creativity, and teamwork while keeping students updated with the latest advancements. The following events are organized as a part of the club.

- **JOURNAL** - The programme inculcates the art of article writing skills amongst students by means of publishing the thematic journal “The Compiler”. Some of the key topics of this journal include Blockchain technology, Cyber Security, Machine Learning, Generative AI and Fuzzy Logic.
- **COMPUTER FAIR** - Students design innovative real-time projects using IoT, full-stack development, and machine learning, showcasing their technical expertise to the public.
- **INNOVISTA** - A dynamic event featuring a series of workshops, competitions, and activities designed exclusively by the B.C.A. students. The latest edition in association with Institution’s Innovation Council featured an international expert talk session on "AI Evolution: Innovating Processes and Scaling GenAI Across Technology Readiness Levels”.
- **INTERNATIONAL PROGRAMMER’S DAY** - It is celebrated on September 13<sup>th</sup> every year to honor programmers and innovators. The department marks the occasion by organizing events like Web-A-Thon, Hackathon, and Idea-Thon.
- **INTERNATIONAL CYBER SECURITY DAY** - The department celebrates International Cybersecurity Day every year with workshops, seminars, and competitions to raise awareness about cybersecurity.
- **OLAP** - An intercollegiate event that brings together students from different colleges belonging to the department of Computer Science and Information Technology in and around the city to explore and exhibit their talents in various domains.



## SOCIAL RESPONSIBILITIES

The college motivates students to take up social responsibility through extension activities such as community service, environmental conservation, and educational outreach, cultivating compassion, leadership, and social consciousness. The following are the extension activities carried out by B.C.A. students.

- **VIGYAN** - “Vaishnav Initiative for Gyaan Dhaan” provided computer training to junior students at Ananya – The Learning Center of the Madras Dyslexia Association, equipping them with essential skills in MS Word and MS Paint.
- **VILLAGE VISIT** - As part of the Thozhil Seyyallam Thozhi initiative, the B.C.A. program adopted Reddipalayam village near Minjur in Tiruvallur District, where students trained villagers in essential office skills, including MS Word and Excel.
- **VIKAS** - The students of the B.C.A. programme conducted an enriching five-day course to impart a diverse array of skills to the students at Mary Clubwala Jadhav Girls' Higher Secondary School, Egmore, Chennai.
- **GYAAN** - The B.C.A. programme in collaboration with CDIX Innovations made an initiative to empower women students on digital electronics and IoT-driven robots. This included a hands-on IoT workshop, providing practical experience in digital electronics and robotics for IX-grade students at Mary Clubwala Jadhav Girls Hr. Sec. School. In the valedictory session, the school students showcased the IoT projects they developed reflecting the quality of knowledge they gained.





## STUDENT ACHIEVEMENTS

- **CM AWARD** - For the year 2016, at the Chennai District level, the Chief Minister's Award for Excellence in e-Governance was won by the B.C.A. students of M.O.P. Vaishnav College for Women for developing an Android application. The students were rewarded Rs.10,000 by Collector E. Sundaravalli I.A.S. The project was nominated for the State level award.
- **OVERALL TROPHIES** - Students from B.C.A. have consistently excelled, securing numerous overall trophies in competitions from top colleges across Chennai showcasing their dedication in academic and extracurricular endeavors.

## INTERNSHIPS AND PLACEMENTS

Students are also led in the right direction to pursue an internship in various top companies like Goldman Sachs, HCL, TCS and more. The unique curriculum, communication and presentation skills have made the students to reach their speculated positions in top IT companies.

**Deloitte.**

**tcs** TATA  
CONSULTANCY  
SERVICES

**LTIMindtree**

**NielsenQ**

**indium**  
MORE TECHNOLOGY MORE

**accenture**

**Goldman  
Sachs**

**LARSEN & TOUBRO**

**TOSHIBA**

## PATHWAYS AFTER B.C.A.

<i>HIGHER STUDIES</i>	<i>CAREER OPPORTUNITIES</i>
<ul style="list-style-type: none"><li>• M.S from Foreign Universities</li><li>• M.Sc. (Data Science)</li><li>• M.Sc. (IT)</li><li>• M.Sc. (Computer Science)</li><li>• Masters of Computer Applications</li><li>• M.B.A</li></ul>	<ul style="list-style-type: none"><li>• Software Engineer</li><li>• Developer / Tester</li><li>• Data Scientist / Data Analyst</li><li>• UX / UI Designer</li><li>• Cyber Security Expert</li><li>• Financial Analyst / Operational Executives in Banks</li></ul>



## FACULTY TEAM



### **Dr. SAKTHI KUMARESH**

**Associate Professor & Head**

**Department of Computer Science and Information Technology, B.C.A.**

**[LinkedIn](#)**

Dr. Sakthi Kumaresh is a self-driven, action-oriented professional with over 24 years of experience in teaching computer science. She specializes in Programming Languages, Software Engineering, Software Quality Management, Web Programming and Machine Learning. Committed to academic excellence and innovation, she brings a deep passion for teaching and research, empowering students with the knowledge and skills to excel in the ever-evolving tech landscape.

### **Ms. SINDHU V**

**Assistant Professor**

**Department of Computer Science and Information Technology, B.C.A.**

**[LinkedIn](#)**

V. Sindhu is a seasoned expert in programming languages, Computer Networks, and Operating Systems. With 25 years of experience, her research focuses on Cloud Computing and Security. Passionate about teaching, she strives to impart her knowledge and expertise to students, equipping them with strong technical skills and a deep understanding of emerging technologies.



### **Ms. JAYANTHI J**

**Assistant Professor**

**Department of Computer Science and Information Technology, B.C.A.**

**[LinkedIn](#)**

Ms. J. Jayanthi is an experienced faculty member who has handled subjects like Digital Logic Fundamentals, Database Systems, Operating Systems. Her areas of research and interest include Cyber Security, Machine Learning and Fuzzy Systems.

### **Dr. PADMAVATHI M S**

**Assistant Professor**

**Department of Computer Science and Information Technology, B.C.A.**

**[LinkedIn](#)**

Dr. M. S. Padmavathi is a technical expert with strong teaching abilities. She is an expertise in Machine Learning, Artificial Intelligence, Augmented and Virtual Reality. She is a passionate researcher actively exploring emerging technologies and motivates students in identifying and working on cutting-edge research areas.





## PROMINENT ALUMNI

Students from B.C.A have pursued their higher studies in various National and International universities. They are also placed in reputed IT and IT related companies.



Keerthana Muralidharan, batch of 2011 - 2014, is pursuing her corporate career as a Manager, Solution Engineer at Freshworks, Chennai.

Debanshi Mahapatra, batch of 2021 - 2024, began her corporate journey as an intern and a full time hire at Goldman Sachs, currently preparing for transition into management.



## ALUMNI TALKS



“As a proud B.C.A. alumnus, my time here was filled with invaluable learning and exposure. The ever-evolving curriculum ensured we stayed updated with emerging fields like Cyber Security and AI. The supportive faculty provided guidance tailored to our interests and industry trends. Beyond academics, vibrant extracurriculars—club events, competitions, and alumni workshops—fostered holistic growth. The strong placement cell brought reputed companies, offering excellent career opportunities. I'm truly grateful to the institution, faculty, and B.C.A. program for shaping my professional journey.”

*Pranjal S, Batch: 2020-2023*

*Associate Analyst*

*Deloitte Consulting Pvt. Ltd, Chennai*

“The B.C.A. program at M.O.P. Vaishnav College for Women offers exceptional education in every subject, including Cyber Security and IT protocols. The curriculum is continually updated to meet the evolving demands of the IT industry. This robust foundation enabled me to pursue Canadian education and gain invaluable international experience. M.O.P. provided constant support and ample opportunities to explore my skills in various technologies, helping me achieve my dreams. It has always been the best place to empower and enhance knowledge in every aspect of computer technology.”

*Hemavarshini K J, Batch: 2018-2021*

*IT Help Desk, Canada*



RESEARCH PAPER PUBLICATIONS

The students and faculty of B.C.A. have published their research papers in UGC listed and Scopus indexed journals.

International Journal of Computer Networks and Applications (IJCNA)  
DOI: 10.22247/ijcna/2023/218518      Volume 10, Issue 1, January – February (2023)

RESEARCH ARTICLE


### Towards Blockchain-Based Secure IoT Communication for 5G Enabled Intelligent Transportation System

Sakthi Kumaresh  
Department of Information Technology, M.O.P. Vaishnav College for Women, Chennai, Tamil Nadu, India.  
sakthi.kma@gmail.com

Received: 17 January 2023 / Revised: 15 February 2023 / Accepted: 18 February 2023 / Published: 26 February 2023

**Abstract** – Intelligent Transportation System (ITS) with the internet of things (IoT) plays an integral role in smart city developments and enables substantial developments in modern human lifestyles. With the emergence of Fifth-Generation (5G) communication technologies, high-speed communications are enabled among multiple internet-connected devices. However, security, reliability, and scalability are significant factors that affect the communication performance of ITS. The conventional security models are mostly centralized and unsuitable for distributed low-powered IoT-enabled 5G ITS. The new-age distributed ledger technology blockchain can improve the

vision but a reality. Smart ITS endeavors to improve driving quality and safety levels by effectively solving driving hazards with the assistance of the Internet of Things (IoT) and modern communication technologies such as 4G and 5G [2, 3]. Smart ITS services depend on observed data streams from various vehicles, and it is crucial to develop a secure connected environment among the vehicles to accomplish the desired ITS application. Principally, the IoT is a promising technology to combine the data of intelligent sensors, actuators, moving vehicles, and various machines.



Proceedings of International AI Conclave Deep Tech in Digital Transformation  
2<sup>nd</sup> Feb 2024, Avichi College of Arts & Science, Chennai, ISBN : 978-81-964523-2-2

### Analysis of Procedural Content Generation and Non-Player Character Behaviour in AI Games

Dr. M.S. Padmavathi <sup>1</sup>, Asma Fathima M <sup>2</sup>, Tanvi Kapoor <sup>3</sup>

<sup>1</sup> Assistant Professor, Department of Information Technology, M.O.P. Vaishnav College for Women, Chennai, India  
<sup>2</sup> Student, Department of Information Technology, M.O.P. Vaishnav College for Women, Chennai, India  
<sup>3</sup> Student, Department of Information Technology, M.O.P. Vaishnav College for Women, Chennai, India

**ABSTRACT:** This research paper delves into the revolutionary influence of artificial intelligence (AI) on the gaming world. This study shows the use of sophisticated algorithms for dynamically adjusting game balance and difficulty. In addition, it also focuses on AI's wide-ranging impact, including non-player character (NPC) behaviour, procedural content generation, and tailor-made gaming experiences. The proposed work involves an analysis of case studies from some of the most notable games. The results of this study showcase the transformative impact of AI in heightening the authenticity, involvement, and flexibility of games. It sheds light on AI's potential to completely transform game creation and enhance user engagement, highlighting its revolutionary influence. Furthermore, the importance of ethical considerations and regulatory structures

PATENT PUBLICATIONS

The B.C.A. faculty has secured patents on "A Wearable Smart Device and a Process for Monitoring Online Examination" and another collaborative effort with students on "An AI Career Counseling Bot with Metaverse Platform and Haptic Technology." Additional notable innovations include "Aqua Shield Arena Mate," a mobile app-enabled IoT solution for managing sports venues with instant rain defense during adverse weather conditions, and "AppGuard Regulator," showcasing the programme focus on cutting-edge technological advancements.



Office of the Controller General of Patents, Designs & Trade Marks  
Department for Promotion of Industry and Internal Trade  
Ministry of Commerce & Industry,  
Government of India

Application Details	
APPLICATION NUMBER	202441 009969
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	14/02/2024
APPLICANT NAME	1 . Dr. Sakthi Kumaresh 2 . Dr. M.S Padmavathi 3 . Purva A 4 . Padmashree M
TITLE OF INVENTION	AQUA SHIELD ARENA MATE: MANAGING SPORTS VENUES WITH INSTANT RAIN D MOBILE APP-ENABLED IOT SOLUTIONS FOR ADVERSE WEATHER CONDITIONS
FIELD OF INVENTION	PHYSICS
E-MAIL (As Per Record)	statsahila@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	



Office of the Controller General of Patents, Designs & Trade Marks  
Department for Promotion of Industry and Internal Trade  
Ministry of Commerce & Industry,  
Government of India

Application Details	
APPLICATION NUMBER	202441052996
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	11/07/2024
APPLICANT NAME	1 . Dr. Sakthi Kumaresh 2 . Dr. M.S Padmavathi 3 . Pavithra V 4 . Monika M
TITLE OF INVENTION	APPGUARD REGULATOR
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	statsahila@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	

## PROJECTS UNDERTAKEN

Students have been continuously exhibiting their projects at the Chennai Trade Fair from 2019 to 2023, organized by the Government of Tamil Nadu in Island Grounds.

In 2019, B.C.A. students from M.O.P. Vaishnav College for Women won the Chief Minister's Award for Excellence in e-Governance by developing an Android application. They also won second rank in national level video presentation competition conducted by the Mathematics Society of Ramanujan College, Delhi.



## CONTACT DETAILS

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