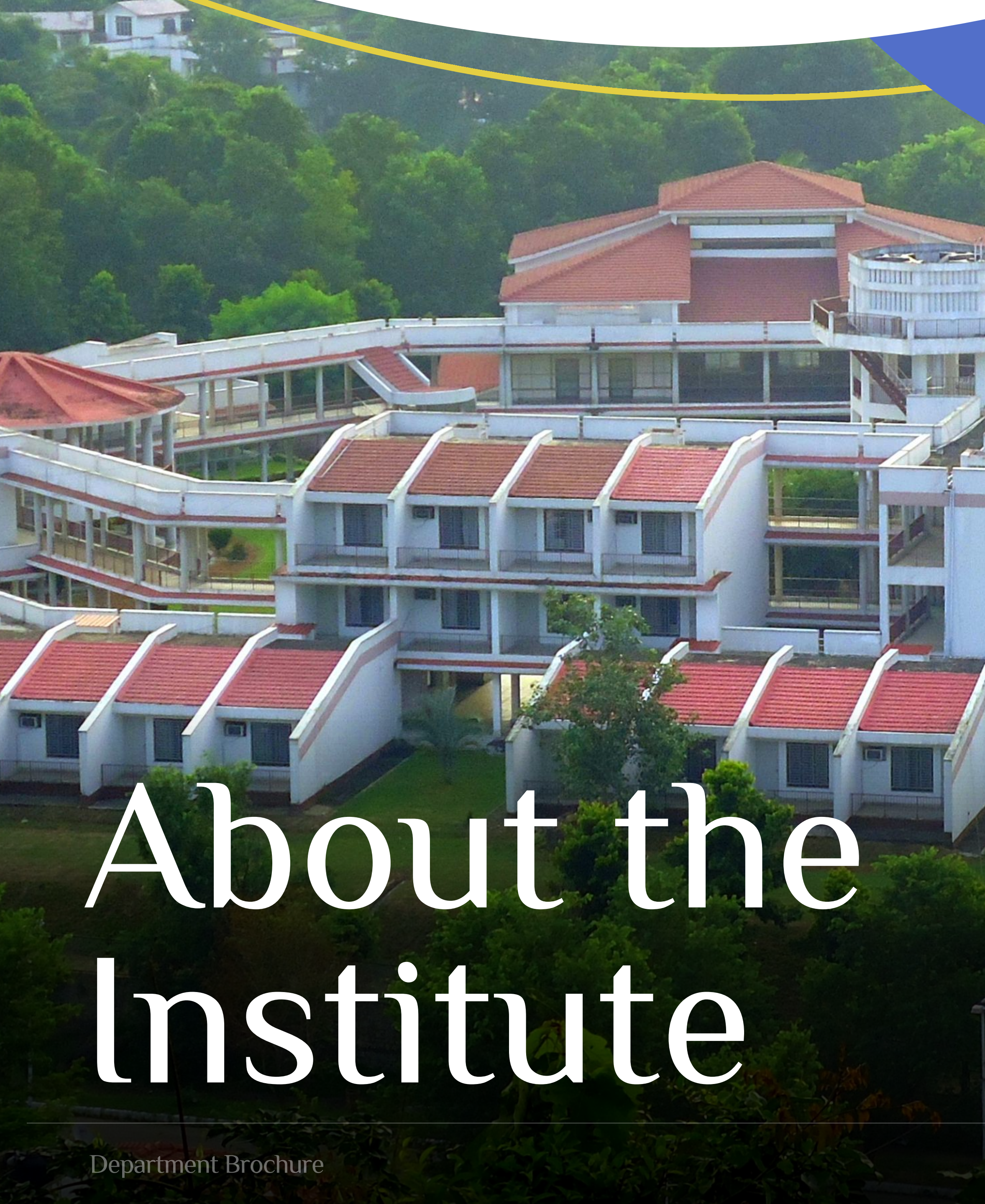Indian Institute Of
Technology, Guwahati

Centre For Career Development

Department of Mathematics

Department
Brochure

Indian Institute of Technology Guwahati

Established in 1994 as an Institute of National Importance, IIT Guwahati has become a preferred destination for people passionate about learning and innovation. IIT Guwahati has been ranked among the Top 100 Young Universities in the world by the Times Higher Education, one of the two Universities from BRICS nations. IIT Guwahati has several factors contributing to how, in a short time, it has established itself as one of the country's best institutes of its kind. The programmes and courses offered at IIT Guwahati are perpetually evolving to adapt to the ever-changing global requirements. The diversity of the fields of study has helped the institute become one of the nation's nerve centres for research, development, and technical education. The faculties ensure that the students are ready to face the challenges of the professional world by providing them with a sound conceptual understanding of their respective disciplines. The institute also offers a plethora of opportunities to students for their holistic development through the excellent facilities that it has for sports and general extracurricular activities

About the Institute

About the
Department of Mathematics

The Department of Mathematics, IIT Guwahati, was formed in 1995. The department offers B.Tech. (Maths & Computing), M.Sc. (Mathematics; Maths & Computing) and Ph.D. programs. The current total enrolment in these programs is 227, 117 and 118, respectively. The academic and research activities are supported by 40 faculty members.

Faculty

The department comprises encouraging and energetic faculty members guiding students through every phase of their career. Over the years, the department has strengthened its research activities, introduced new academic programs, and contributed to society by participating in various activities.

Students

The final-year students from the Department have completed internships in companies and research labs in India and abroad and have worked in national and international sponsored projects as part of the curriculum. The Department has an excellent placement record over the past years, with students working in leading companies. Since its inception, the Department has consistently been recognized worldwide for its research, teaching, and training excellence. The Department has churned out batches of motivated and dedicated students with a commitment and competence to pursue careers, both in academia and industry, in Mathematics, Computer Science, Probability, Statistics, and Finance

Dear Recruiter,

I am pleased to introduce the graduating class of 2024 from our M.Sc Mathematics , M.Sc in Mathematics & Computing and B.Tech in Mathematics & Computing from the Department of Mathematics. The program has core components of Mathematics, Numerical Computing, and Computer Science, which provide a sound foundation for the skills needed in industrial practice. A dedicated team of faculty members with expertise in diverse domains trains the students.

The curriculum includes compulsory courses on Algorithms, Numerical Analysis and electives on Databases, Finance and Advanced Mathematics. Our department is equipped with state-of-the-art computing facilities that are accessible to all students at any time without restriction.

The graduates of the previous batches have joined prestigious academic institutes and taken up positions in finance, software, and other industries. I firmly believe our current batch of students is also well prepared to undertake industrial assignments and add value to your organization

PROF. NATESAN SRINIVASAN
Head of Department

PROF. AYON GANGULY

Faculty Coordinator

Dear Recruiter,

I am excited to introduce the graduating class of 2024 from our esteemed M.Sc Mathematics , M.Sc in Mathematics & Computing and B.Tech in Mathematics & Computing. As the Faculty Placement Coordinator, I am proud to share that our students have undergone rigorous training in core areas including Mathematics, Numerical Computing, and Computer Science, equipping them with a strong foundation for success in various industrial roles.

Our curriculum is designed to blend theoretical knowledge with practical skills, featuring mandatory courses in Algorithms and Numerical Analysis, alongside electives such as Databases, Finance, and Advanced Mathematics. Our state-of-the-art computing facilities are available to students 24/7, ensuring they have constant access to the tools needed for their studies.
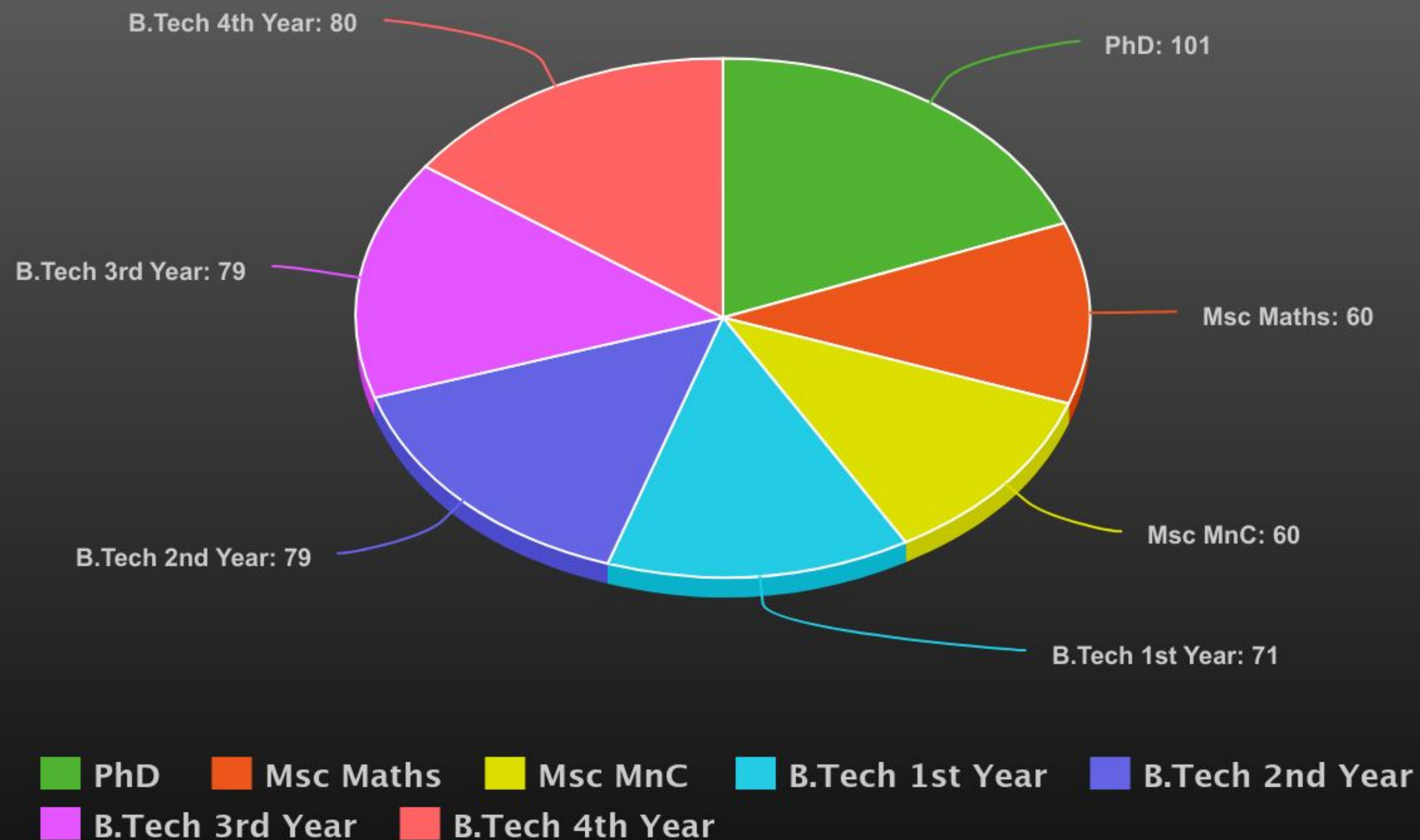
Our graduates have a proven track record of excelling in prestigious academic institutions, finance, software development, and other dynamic industries. I am confident that the current batch of graduates is exceptionally well-prepared to contribute positively to your organization and thrive in challenging professional environments.

DEMOGRAPHICS

Programs Introduced

First	Last
PhD	1996
M.Sc MnC	2000
B.Tech	2006
M.Sc Maths	2023

PROGRAMS INTRODUCED

B.Tech 4th Year: 80

PhD: 101

B.Tech 3rd Year: 79

Msc Maths: 60

Msc MnC: 60

B.Tech 2nd Year: 79

B.Tech 1st Year: 71

Legend: PhD — Msc Maths — Msc MnC — B.Tech 1st Year — B.Tech 2nd Year — B.Tech 3rd Year — B.Tech 4th Year

meta-chart.com

About the Program
B.Tech Mathematics and Computing

The 4-year programme, B.Tech. in Mathematics and Computing, is a unique programme and the first of its kind in the country. The students are admitted through JEE (Advanced). The curriculum for this program is designed to meet the need for sophisticated mathematics in modern scientific investigations and technological innovations.

The program has three components: mathematics, computing, and financial engineering. These strong mathematical and analytical components form the basis for the introduction of technological aspects of computing and finance. Consequently, the programme, which is run by a team of committed faculty as instructors, produces a group of students with multiple skills in mathematics, computer science, and financial engineering.

Since its inception in 2006, this program's success has been manifested through internships, job placements, and admissions for higher studies at premier institutions, both in India and abroad.

About the Program
M.Sc Mathematics and Computing

The program started in 2000 and has encouraged several other institutes and universities nationwide to initiate similar interdisciplinary programs. The main objective of the program is to create academicians and tailor-made technocrats who can immediately deliver the know-how in Academic and Developmental activities of the Software and Financial industries.

The course spans four semesters over two years and includes a seminar course and a final semester project. The curriculum focuses on providing in-depth knowledge of theoretical and computational aspects of Mathematics and Computer Science.

This program attracts not only undergraduate students with a background in Mathematics but also students from various engineering disciplines. The program admits the students based on the scores obtained in IIT JAM conducted by different IITs and IISC.

About the Program
M.Sc Mathematics

The Department of Mathematics at the Indian Institute of Technology Guwahati introduced a 2-year M.Sc. program in Mathematics in 2023. This program offers a well-rounded curriculum, blending theoretical, computational, and applied mathematics, ensuring students are well-prepared for both academic and industrial challenges.

Spanning four semesters, the curriculum delves deeply into core areas of mathematics, while also incorporating elements of computing and statistics, providing students with the necessary tools to address real-world problems. Students gain exposure to advanced research through electives and a mandatory one-semester project. While the program emphasizes mathematical rigor, students frequently prepare themselves for careers in Data Science, Software, and Ed-Tech sectors by honing their computational and analytical skills.

Admission is based on performance in the IIT JAM exam, attracting top students from diverse academic backgrounds. Graduates are equipped to excel in various roles, including research, education, and industry-focused positions

Course Structure

COMPUTER SCIENCE

- C/C++
- Data Structures and Algorithms
- Database Management System
- Network Flow Algorithms
- Parallel Computing
- Theory of Computation

BASIC MATHEMATICS

- Linear Algebra
- Modern Algebra
- Discrete Mathematics
- Real Analysis
- Complex Analysis
- Numerical Analysis

APPLIED MATHEMATICS

- Advanced Statistical Algorithms
- Probability Theory
- Applied Statistics
- Stochastic Calculus For Finance
- Statistical Methods and Time Series Analysis

ADVANCE MATHEMATICS

- Optimization Techniques
- Number Theory and Cryptography
- Functional Analysis
- Topology
- Differential Equations
- Graph Theory

OTHER COURSES

- Numerical Linear Algebra
- Numerics of PDE
- Mathematical Finance
- Mathematics of Financial Derivatives

Groupwise Research Areas

COMPUTER SCIENCE

- Complexity Theory
- Distributed Computing
- Wireless Sensor Networks
- Computer Networks and Network Security
- Formal Languages and Automata Theory

MATHEMATICS

- Combinatorics
- Algebraic Geometry
- Complex Dynamics and Fractals
- Computational Fluid Dynamics
- Fractional Differential Equations
- Graph Theory
- Stochastic Models for Chronic Leukemia

## PROBABILITY, STATISTICS AND FIANANCE

- Advanced Statistical Algorithms
- Clinical Trial
- Health Data Science
- Life Time Data Analysis
- Mathematical Finance
- Probability Theory
- Q-learning (Reinforcement Learning)
- Statistical Theory

Sponsored Projects

S.No.	Name of the Investigator	Funding Agency	Title of the project and duration (Start and enddate)	Amount sanctioned
1	Jiten ChandraKalita (PI) Satyajit Pramanik (co-PI)	SERB	High order compactsimulation of flow and transport in porousmedia (2024-2027)	*32.15 Lakhs*
2	Arup Chattopadhyay(PI)	SERB	Multi-variable Trace formulae on symmetric spaces (2024-2027)	*25.55 Lakhs*
3	Bhupen Deka(PI)	SERB	Weak Galerkin Finite Element Methods for Maxwell's Equations with Discontinuous Coefficients (2024-2027)	*27.75 Lakhs*
4	Rupam Barman (PI)	SERB	Distribution of certain partition functions(2022-2025)	*27.30 Lakhs*
5	Dr. Gete Umbrey, Mentor: Bhaba Kumar Sarma	SERB	Study of Truth Graphs: Applications in Logic gate and Cryptography (2022 – 2025)	18.30 Lakhs
6	Sunanda Saha, Mentor: Swaroop Nandan Bora	SERB	Transient Analysis of Hydrodynamic Coefficients Connectedto Cylindrical Breakwaters (2021-2024)	18.30 Lakhs
7	Palash Ghosh	Institute of Data Engineering,Analytics & Science Foundation (IDEAS) TechnologyInnovation Hub (IDEAS- TIH), ISI Kolkata	Synthetic Data Generation: Protecting Individual Privacy and Statistical Properties(2024-2026)	36.32 Lakhs
8	V. Subburayan, Mentor: Natesan Srinivasan	SERB	Robust computational methods for 2D singularly perturbed parabolic differential equations (2021-2024)	18.30 Lakhs
9	Ashok Singh Sairam (PI)	DST-DAAD	Distributed Authentication and Privacy Scheme (DAPS) (01/01/2024-31/12/2025)	8.40 Lakhs

PMRF Scholars

S.NO	CYCLE	NAME
1.	9	SAIKAT GIRI
2.	9	ACHYUTA RANJAN DUTTA MOHAPATRA
3.	9	SASWATA JANA
4.	10	ARKA MUKHERJEE
5.	11	AKASH KALITA
6.	11	AMIT GHOSH
7.	11	KOUSHIK BHAKTA
8.	11	MONTI DAS
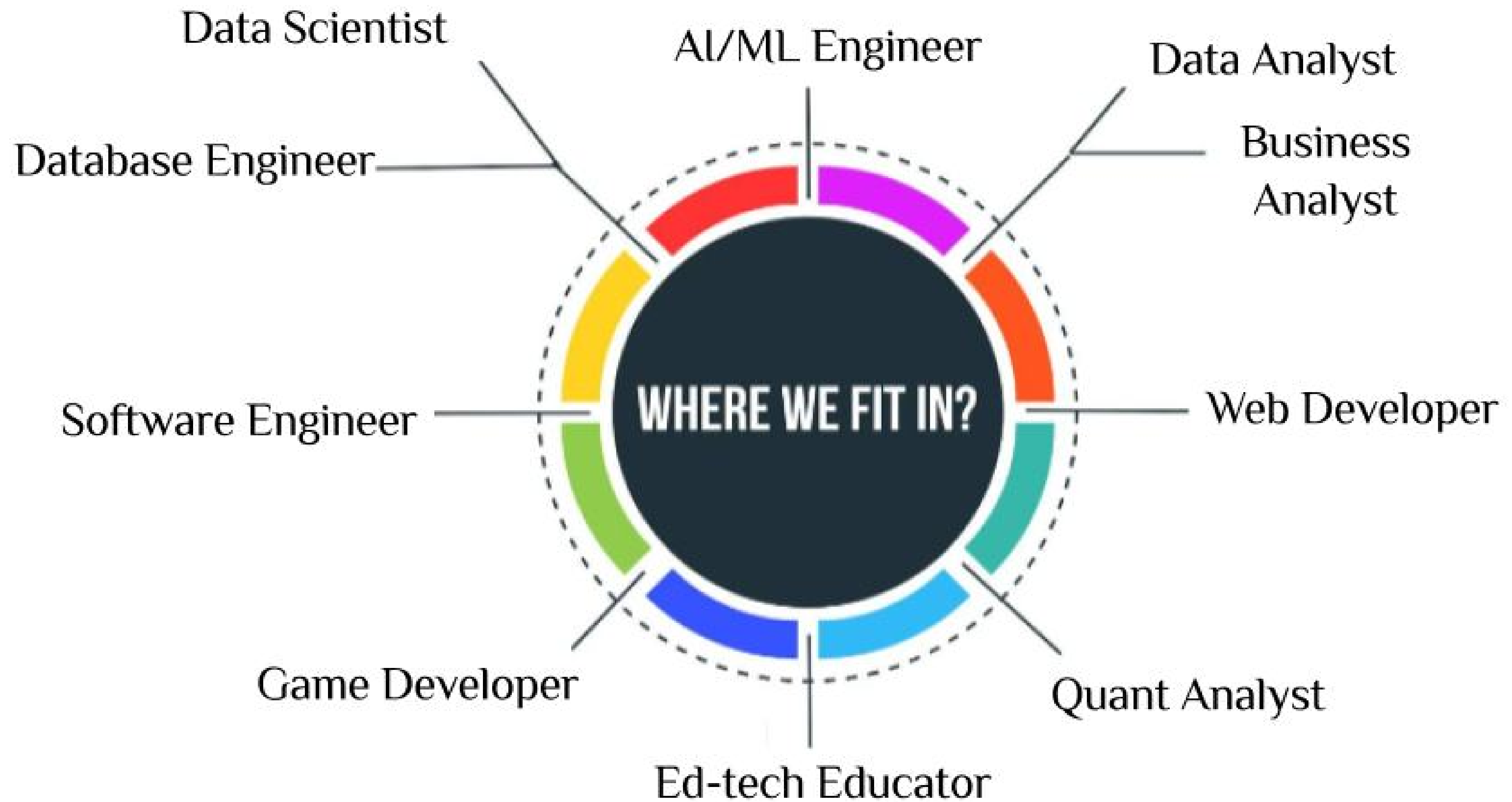
Past year Placement Statistics
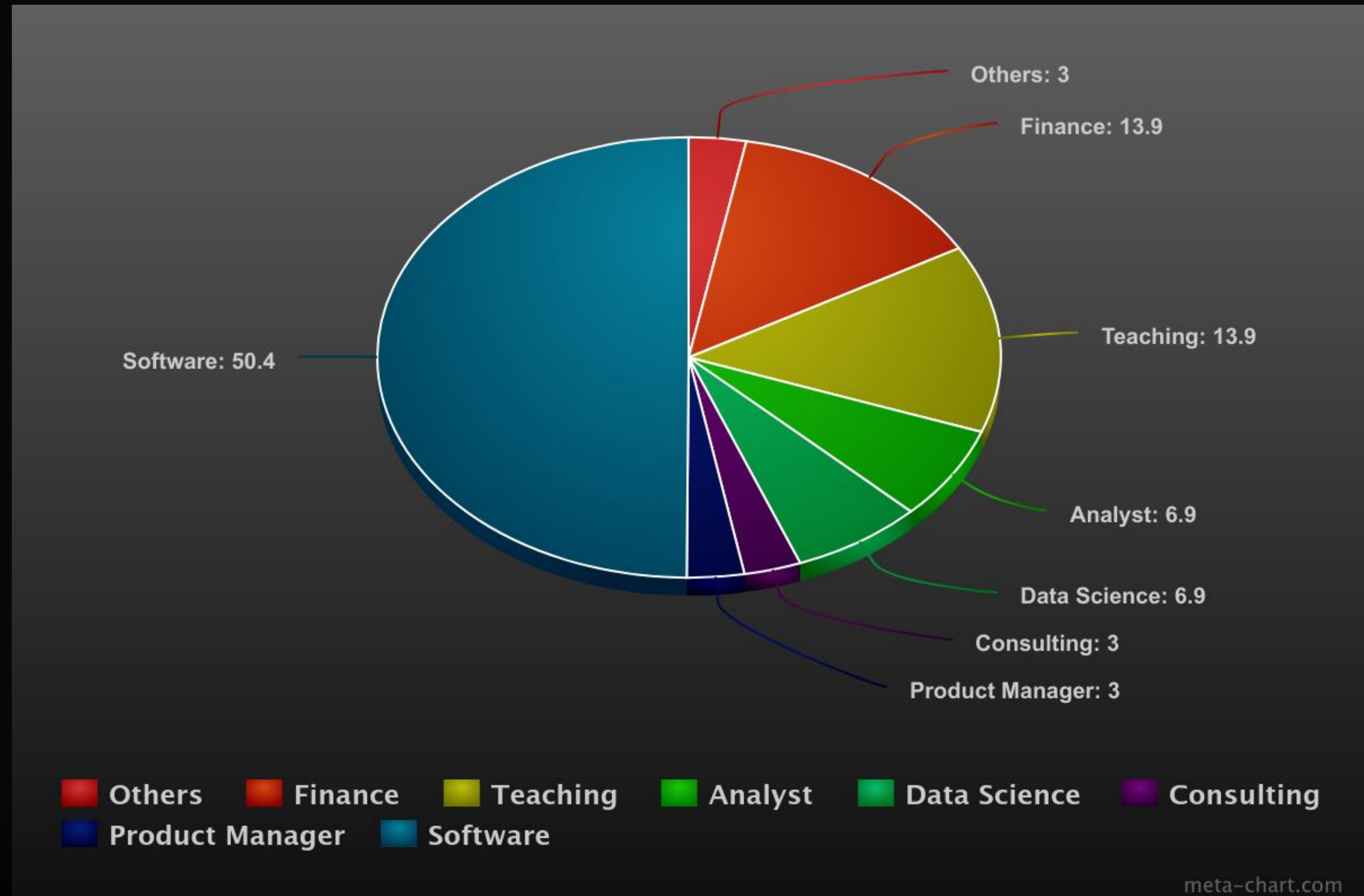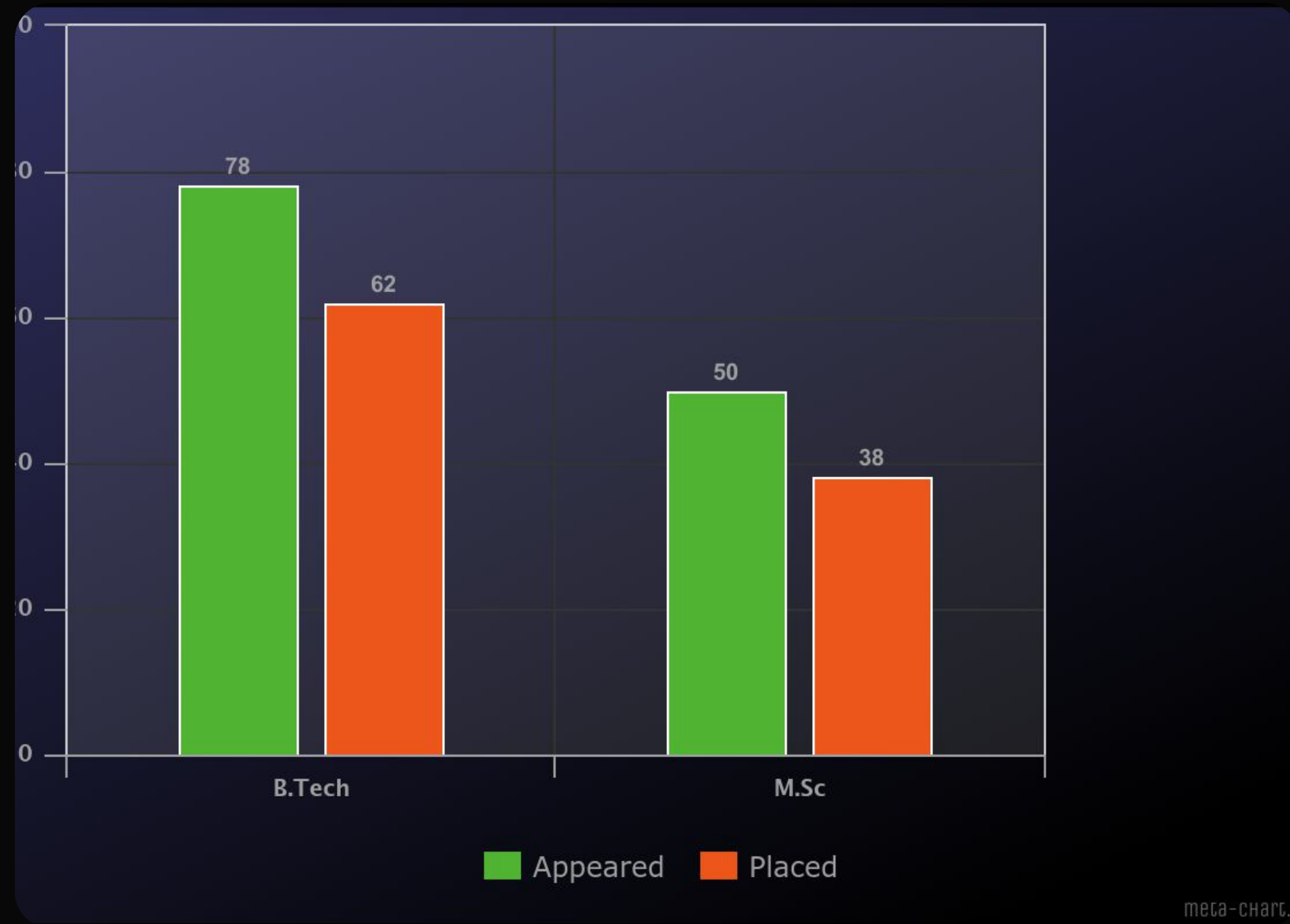
APPEARED VS PLACED

Past Recruiters

Past Recruiters

SAMSUNG

Disney+

IBM

DevRev

Flipkart

WELLS FARGO

Razorpay

salesforce

BCG
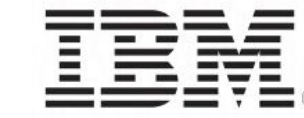
Deloitte.

Meta

BANK OF AMERICA

amazon

Capgemini

Infosys

BARCLAYS

L&T

BOSCH

ZS

pwc

Alumni Insights

SHUBHAM AGARWAL

SQUAREPOINT CAPITAL, LONDON

As A Mathematics And Computing Student, My Education Provided Me With A Broad Range Of Technical Skills That Were Highly Relevant To The Finance Industry. Mathematics And Computer Science Are Both Fields That Emphasize Logical Thinking, Analytical Reasoning, And Problem-Solving. These Skills Are Highly Valued In The Finance Industry, Where Individuals Are Often Called Upon To Solve Complex Problems And Make Data-Driven Decisions.

RAUNAK TIWARI

SOFTWARE ENGINEER, GOOGLE

Throughout My Coursework, I Gained A Strong Understanding Of Operating Systems And Networks, As Well As Specialized Topics Like Probability, Statistics, And Stochastic Calculus. In Addition To Technical Skills, Mathematics And Computer Science Emphasize Logical Thinking, Analytical Reasoning, And Problem-Solving. These Skills Would Be Invaluable In My Career, As They Would Help Me Solve Complex Problems And Make Data-Driven Decisions.

Alumni Insights

PRIYANSHU GUPTA

SOFTWARE ENGINEER, RAKUTEN (JAPAN)

The MSc In Mathematics And Computing Program At IIT Guwahati Provides A Strong Foundation In Mathematical And Computational Concepts, Which Are Essential For Developing Complex Software Applications. The Program Covers A Wide Range Of Topics Such As Algorithms, Data Structures, Machine Learning, And Cryptography, Among Others. The Diverse Curriculum Helps Students Develop A Broad Understanding Of Computer Science Concepts And Their Applications, Which Is Highly Valued In The Software Development Industry.

DIBYENDU DEY

SOFTWARE ENGINEER, GOOGLE

The MSc In Mathematics And Computing Program At IIT Guwahati Equips Students With A Strong Foundation In Theoretical And Practical Computer Science Concepts, Along With Industry Exposure, Which Helps Them Excel In The Software Development Industry. The Exposure To Real-World Problems And The Opportunity To Work On Projects With Industry Experts Helps Students Develop Critical Thinking, Problem-Solving, And Collaboration Skills, Which Are Essential For Success In The Software Development Industry.

Contact Us

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