



Students' Newsletter of Indian Institute of Information Technology Guwahati  
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(Dr. Rekha Deka)





7<sup>TH</sup>  
EDITION  
**CONVEVİUM 2k17**



KAUSTAV GOSWAMI

THE WELCOMING CEREMONY FOR THE JUNIOR UNDERGRADUATES WAS FINALLY ORGANIZED ON OCTOBER, THE 15TH OF 2017, WITH THE OUTMOST PARTICIPATION OBSERVED FROM THE JUNIORS. THE MAIN MOTTO OF SUCH A CEREMONY WOULD BE OF FULL PARTICIPATION BY ALL. AS IT WAS ALSO THE CASE IN THIS YEAR'S WELCOMING CEREMONY. THE ORGANIZING BATCH DID SOME STRUGGLE THIS YEAR, AS THE EVENT HAD TAKEN PLACE AFTER THE ENDEAVOR SEEN IN THE WILL OF THE ORGANIZERS. PERHAPS THAT IS A STORY FOR ANOTHER DAY. BUT WHAT REALLY IMPORTANT IN THIS CHAPTER IS THE THINGS WHICH DID HAPPEN ON THE DAY OF THE CEREMONY, OR AS IT WAS CALLED AS 'THE CONVEVİUM 2k17'.

FOR THE FIRST TIME IN THE INSTITUTE'S HISTORY, THE FRESHER'S PARTY EVENT WAS COMPLETELY FUNDED BY THE INSTITUTE. WITH THE EFFORTS OF THE GYMKHANA COUNCIL, THE EVENT HAD A GREEN LIGHT ON THE PREVIOUS. SOON AFTER, PREPARATIONS WERE STARTED BY THE ORGANIZERS, WHO WERE COLLECTIVELY THE SECOND YEAR STUDENTS OF BOTH THE BRANCHES. THE TITLE OF THE PARTY WAS THEN DECIDED AND ALL THE INITIAL EVENTS AND TIMELINE WAS FIXED.



THE EVENT WAS HELD AT COTTON UNIVERSITY'S AUDITORIUM 'KALA GURU BISHNU RABHA' AUDITORIUM. THE EVENT STARTED AROUND 2'O CLOCK IN THE AFTERNOON WITH AN INTRODUCTORY SPEECH BY A MEMBER OF THE ORGANIZING COMMITTEE. THE SPEECH LARGELY DISCUSSED THE UPCOMING JOURNEY IN THE LIVES OF THE JUNIORS. COLLECTIVELY PUT, THE JOURNEY COMING AHEAD IN THE PATH OF ENGINEERING WAS LATER DISCUSSED DURING THE SPEECH. THE SPEECH ALSO COMMEMORATED THE BRAVE SACRIFICE OF VAMSI. THE EVENT LINEUP THEN BEGAN TAKING SHARP ACTION AS THE WHOLE EVENT STARTED LATE THAN THE SCHEDULED TIME. THE SERIOUSNESS OF THE ENVIRONMENT WAS THEN CALMED DOWN BY A SOLO DANCE PERFORMANCE FROM SECOND YEAR STUDENT. FOLLOWING UP THE SOLO DANCE, PEOPLE SAW ANOTHER DANCE AS IT WAS DESCRIBED AS THE FUSION DANCE BY FIRST YEAR STUDENTS.

KEEPING THE MOTTO IN POSITION, FOR A BETTER UNDERSTANDING OF THE UPCOMING BOND OF FRIENDSHIP BETWEEN THE STUDENTS, THE ANCHOR THEN BROKE THE SURPRISE OF A FEW HIDDEN TASKS WHICH WERE CAREFULLY CRAFTED BY THE ORGANIZERS THE PREVIOUS DAY IN ASSOCIATION WITH THE OPINION OF THE WHOLE BATCH OF SECOND YEAR STUDENTS. THE TASKS WERE SIMPLE. THE ONLY TARGET WAS TO MAXIMIZE PARTICIPATION OF THE JUNIORS. SOLO DANCE OR SOLO SINGING EVENTS WERE THE COMMON TASKS GIVEN. THE WHOLE GALLERY WAS ENGULFED IN CHAOS IN ORDER TO CHEER THE PARTICIPANTS IN THEIR RESPECTIVE TASKS. CHAOS TURNED INTO A COMIC SITUATION AS AUDIENCE RUSHED TO THE STAGE IN SUPPORT DURING THE DANCE EVENTS.



# 7<sup>TH</sup> EDITION



THE WHOLE EVENT WAS COMPRISED OF MOSTLY OF DANCE EVENTS. DUAL DANCE EVENTS WERE ACTUALLY WORTH REMEMBERING AS TO SEE THE MIX OF TWO PARTICIPANTS FUSED WITH THE RHYTHM WHICH PRODUCED SOMETHING EXTRAORDINARY. AGGRESSIVE DANCE PERFORMANCES, DONE THE FIRST YEAR STUDENTS, PUT AN EMPHASIS ON CREATING SOMETHING UNIQUE WAS SOON FOLLOWED THE DUAL DANCE EVENT.

THE SINGING EVENTS WERE KEPT TOWARDS THE END OF THE FIRST HALF OF THE FRESHER'S EVENT. BOTH THE SOLO AND DUET SINGING PERFORMANCE WERE GREAT TO WATCH. SINGING EVENTS WERE MOSTLY PERFORMED BY GIRLS OF FIRST YEAR AND THEY'VE DONE A VERY GOOD JOB OF CREATING A WONDERFUL ATMOSPHERE WITHIN THE HALL. THE CONCLUDING EVENT WAS A SOLO PERFORMANCE BY SECOND AND THEN A FIRST YEAR STUDENT AND THUS MADE A MARK OF ENDING OF THE FIRST HALF OF THE FRESHER'S EVENT.

HERE SAW THE ARRIVAL OF THE TEACHER IN CHARGE OF THE EVENT, DR. SURANJANA BARUA, COORDINATOR OF CULTURAL AFFAIRS BOARD, AND ALSO DR. L. DAVID LAL, ASSOCIATE COORDINATOR OF CULTURAL AFFAIRS BOARD, FROM THE HUMANITIES DEPARTMENT. THEY WERE WELCOMED BY THE STUDENTS. AS THEY'VE JOINED AS AUDIENCE IN THIS EVENT, THEY WERE TAKEN SPECIAL CARE OF.

BY THIS TIME, THE SCHEDULE WAS RUNNING WAY BEHIND TIME AND THUS, REFRESHMENT TIMING WAS DROPPED TO BRING IN THE EVENT OF MR. AND MS. FRESHER. SIMPLY PUT, THIS MAIN OBJECTIVE WAS SIMPLICITY. CROSS QUESTIONING BY THE JUDGES TO MAKE IT A PSEUDO DEBATE LIKE COMPETITION WAS SOMETHING OUT OF THE BOX THAT WAS DESIGNED. THREE ROUNDS OF ELIMINATION TO EXTRACT OUT THE BEST PERSON WHO COULD ACTUALLY PERFORM DESPITE OF THE PRESSURE PUT ON THEM, WAS TRULY WORTH WATCHING. INITIAL ROUNDS WERE MOSTLY INTRODUCTION TYPE, AS TO HOW WOULD ONE INTRODUCE HIMSELF OR HERSELF TO THE OTHERS AND THUS, IT ELIMINATED VARIOUS CONTESTANTS. THE ROUNDS CLOSED IN WITH A TOPIC GIVEN, NOT EXTEMPORE, AND THE CONTESTANTS HAD TO SPEAK ABOUT IT. AND PERFORMANCE WAS INCLUDED IN THE NEXT ROUND. THE STRIKING SPEECH GIVEN BY RAJAT BHATTACHARYA IN THIS ROUND WAS WORTH REMEMBERING. THIS KEPT THE CONTESTANTS RAJAT BHATTACHARYA, SUSHANT AGGARWAL AND NEELAVDEEP BHAGAWATI IN THE FINAL ROUND. THE PERFORMANCE OF RAJAT MADE HIM THE BEARER OF THE TITLE 'MR. FRESHER' FOR THE YEAR 2017. ON THE OTHER HAND, QUALIFYING GIRLS FOR THE FINAL ROUND WERE ZINEA DAS, AKANSHA AND MARY ARADHIYA DAIMARI. FINALLY, ZINEA DAS' PERFORMANCE MADE HER 'MS. FRESHER' OF THE YEAR 2017 IN THE SAME EVENT.

THE SCHEDULE CLOSED IN WITH THE MOST AWAITED EVENT, THAT IS DJ NIGHT. THE ENERGY SHOWN DURING THIS EVENT BY THE STUDENTS WAS SOMETHING WORTH MENTIONING. THIS EVENT SAW THE MIXING UP OF THE TWO BATCHES. THUS WELCOMING OF THE FIRST YEARS WAS SUCCESSFUL. PARTICIPATION ELIMINATED THE SHYNESS OF THE JUNIORS AS THEY'VE JOINED WITH THEIR ONE YEAR SENIORS IN THE MIXING EVENT. GETTING TO KNOW EACH OTHER IN THIS WONDERFUL EVENT BY DANCING TOGETHER, WHERE THERE WAS NO ONE TO JUDGE, WAS MAYBE THE REASON BEHIND THE OPENNESS OF BOTH THE BATCHES. MAYBE THIS IS THE REASON WHY SUCH AN EVENT WAS ORGANIZED IN FIRST PLACE. MAYBE THIS IS WHAT BONDED BOTH THE BATCHES TOGETHER FOR THE TIME COMING AHEAD. MAYBE THIS IS WHAT BINDS AN INSTITUTE TOGETHER. MAYBE THIS IS WHAT IS CALLED FRIENDSHIP.

EVENTS SOON CONCLUDED. PACKING UP OF EQUIPMENT WAS STARTED. MEANWHILE REFRESHMENTS HAD ARRIVED FOR ALL THE ATTENDEES. TEACHERS IN CHARGE HAD THE RESPONSIBILITY OF MAKING THE FINAL CALL OF HEADING HOME. REFRESHMENT CONTAINED SIMPLE BUT DELICIOUS BAKERY ITEMS WHICH WAS ENOUGH TO ESCAPE THE 'MESS' FOOD. BUSES STARTED TO LEAVE BY SEVEN AND THUS ENDING THE EVENT.



EDITION

# Status Of The Clubs In IIITG



NILOTPOLA SARMA

WITH THE WRAPPING UP OF THE GYMKHANA ELECTIONS IIITG HAS SEEN SEVERAL OLD CLUBS BEING REVIVED AND SEVERAL NEW CLUBS BEING CONSTITUTED. HERE WE BRING TO YOU AN INSIGHT INTO THE GOING-ONS IN THESE CLUBS AND THEIR FUNCTIONING.

(NOTE: THESE ARTICLES HAVE BEEN PUBLISHED WITH INFORMATION RECEIVED FROM THE GENERAL SECRETARY SPORTS BOARD, THE GENERAL SECRETARY TECHNICAL BOARD AND THE GENERAL SECRETARY CULTURAL BOARD FOR WHICH WE WOULD LIKE TO THANK THEM.)

**CULTURAL CLUBS:** THE CULTURAL CLUBS OF IIITG WHICH WERE ESTABLISHED TO PROVIDE A PLATFORM FOR CULTURAL ACTIVITIES IN THE COLLEGE ARE AS FOLLOWS:

**DANCE:** THE IIITG DANCE CLUB WHICH HAS BEEN THERE FROM BEFORE THE NEW GYMKHANA ELECTIONS IS FUNCTIONING UNDER THE LEADERSHIP OF BISWA SOREN AND HARSHA. REGULAR PRACTICE SESSIONS TAKE PLACE EVERY FRIDAY AFTERNOON FROM 2:00 PM TO 5:00 PM IN WHICH MEMBERS PREPARE THEMSELVES FOR THE UPCOMING COMPETITIONS AND EVENTS.



**LITERATURE:** THE IIITG LITERATURE CLUB HAS BEEN ESTABLISHED FOR THE FIRST TIME AFTER THE GYMKHANA ELECTIONS THIS YEAR BUT IT IS NOT FULLY FUNCTIONAL YET.

**PHOTOGRAPHY:** THE IIITG PHOTOGRAPHY CLUB HAS BEEN ESTABLISHED AFTER THE GYMKHANA ELECTIONS AND IS FUNCTIONING UNDER THE LEADERSHIP OF ANKUSH RODEWAL. IT HAS A FULLY FUNCTIONAL FACEBOOK PAGE WHERE MEMBERS POST REGULAR UPDATES AND PHOTOGRAPHS. WITH LARGE NUMBER OF PHOTOGRAPHY ENTHUSIASTS IN OUR COLLEGE, THIS CLUB IS CAPABLE OF BEING VERY SUCCESSFUL IN THE NEAR FUTURE.

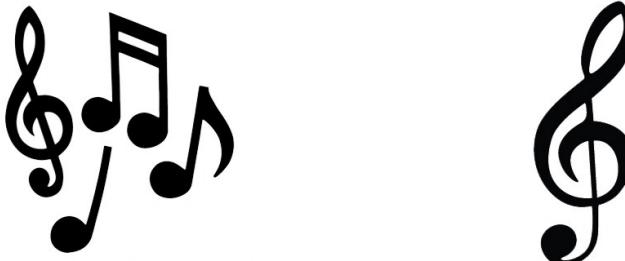




**7<sup>TH</sup>**  
**EDITION**



**MUSIC:** THE IIITG MUSIC CLUB WHICH HAS BEEN THERE FROM BEFORE THE NEW GYMKHANA ELECTIONS IS FUNCTIONING UNDER THE LEADERSHIP OF ABHISHEK BOSE. REGULAR PRACTICE SESSIONS TAKE PLACE EVERY FRIDAY AFTERNOON FROM 2:00 PM TO 5:00 PM IN WHICH MEMBERS PREPARE THEMSELVES FOR THE UPCOMING COMPETITIONS AND EVENTS.



**ART:** THE IIITG ART CLUB IS YET TO BE FUNCTIONAL AND AS PER LATEST INFORMATION HAS NO LEADER.

**QUIZ CLUB :** THE IIITG QUIZ CLUB IS FUNCTIONAL UNDER THE LEADERSHIP OF RAJAT BHATTACHARYYA. THE CLUB HAS A FACEBOOK PAGE WHERE QUESTIONS ARE PUT UP FOR THE MEMBERS TO ANSWER. THE CLUB HAS SEEN MUCH PARTICIPATION AND HENCE HAS THE POTENTIAL TO COME UP WITH BRILLIANT QUIZZARDS.



**TECHNICAL CLUBS:** THE TECHNICAL CLUBS WHICH WERE ESTABLISHED FOR THE TECHNICAL UPLIFTMENT AND TO INCREASE INTEREST IN TECHICAL ACTIVITIES WILL BE FUNCTIONAL FROM THE COMING SEMESTER ACCORDING TO THE TECHNICAL BOARD.





#### **SPORTS CLUBS: THE SPORTS CLUBS OF IIITG WHICH WERE ESTABLISHED TO PROVIDE A PLATFORM FOR SPORTS IN THE COLLEGE ARE AS FOLLOWS:**

**TABLE TENNIS CLUB:** THE TABLE TENNIS CLUB WHICH HAS BEEN SET UP EXCLUSIVELY FOR THE TABLE TENNIS SPORT TAKES PLACE IN THE TABLE TENNIS ROOM IN THE HOSTEL PREMISES. IT HAS SEPERATE TIMINGS FOR GIRLS FROM 5:00 TO 7:00 PM ON WEEKENDS AND FROM 7:00 TO 8:00 PM ON WEEKDAYS. THE TABLE TENNIS CLUB FOR THE BOYS IS ON THE BOOKS BUT YET TO BE FUNCTIONAL ACCORDING TO THE SPORTS BOARD.



**CHESS CLUB:** THE CHESS CLUB WHICH IS LED BY RUSHIKESH SHIMPI HAS A PROMISING AMOUNT OF PARTICIPATION AND BOASTS MANY GOOD CHESS PLAYERS. THERE IS ENOUGH CAPABILITY TAKE ON OTHER COLLEGES IN CHESS COMPETITION WHICH ARE BEING CURRENTLY EXPLORED BY THE CLUB.



THE SECRETARY OF THE SPORTS BOARD, STUDENT'S GYMKHANA COUNCIL, IN CONVERSATION WITH THE IIITG HERALD, SAID THAT THERE ARE PLENTY OF OTHER CLUBS LIKE CARROM, TT FOR BOYS, LAN GAMING ETC WHICH ARE POSSIBLE TO SET UP. BUT HE SAID THAT THERE IS NO IMMEDIATE POSSIBILITY OF A BADMINTON OR VOLLEYBALL CLUB AS THE COURTS AT THE HOSTEL PREMISES ARE SELDOM AVAILIBALE FOR THE STUDENTS. HE ALSO ADDED THAT THERE IS A PROSPECT FOR THE ESTABLISHMENT OF A FOOTBALL CLUB.



# Diwali enlivens the campus life

SOURISH DHEKANE

"DIWALI", THE FESTIVAL OF LIGHTS, ILLUMINATED THE LIVES OF THE HOSTELLERS OF IIITG AND WAS CELEBRATED WITH AN ASTONISHING PARTICIPATION. ON THE EVENING OF "LAXMIPUJAN", THE HOSTELLERS GATHERED AROUND THE GARDEN AND DISTRIBUTED DELIGHTS TO START THE CELEBRATIONS ON A SWEETER NOTE. THIS WAS FOLLOWED BY BURSTING CRACKERS AND ONE COULD LITERALLY SEE SHEER HAPPINESS AND JOYS ON THE ILLUMINATED FACES OF THE IIITIANS.

ALONG WITH THE CRACKERS, MANY CELEBRATED THE EVENING BY SINGING SONGS AND DANCING ON THE BEATS. IN THE END, DOZENS OF SWEETS WERE SHARED, PLENTY OF CRACKERS WERE BURST, HUNDREDS OF SELFIES WERE CLICKED BUT MOST IMPORTANTLY, COUNTLESS MEMORIES WERE MADE WHICH WOULD NOT BE FORGOTTEN FOR SURE!





7TH  
EDITION

# nLighten – A Campaign



PALAK KAPOOR

NDIMENSIONS IS AN ENTREPRENEURIAL INITIATIVE BY R.M. AJITH KUMAR, AN ECE STUDENT OF THE BATCH OF 2015. THIS STARTUP IS MAKING GREAT BUZZ WITH ITS NATION-WIDE CAMPAIGN INITIATIVE, NLIGHTEN, HENCE WE AT IIITG HERALD SOUGHT TO COVER IT IN THIS EDITION. PRESENTED BELOW IS WHAT AJITH HAS TO SAY ABOUT NDIMENSIONS AND NLIGHTEN. WE STARTED NDIMENSIONS ABOUT EIGHT MONTHS BACK.

WE STARTED WITH A VISION TO CREATE A COMMUNITY OF STUDENT ENTREPRENEURS THAT IS WELL-CAPABLE OF THRIVING AS A SELF-SUSTAINING ECOSYSTEM AND OUR MISSION WAS TO BE THE VEHICLE OF CHANGE THAT REDEEMS ENTREPRENEURSHIP FROM THE SHACKLES OF SOCIO-EDUCATIONAL-STEREOTYPES-DRIVEN INHIBITIONS. SO BASICALLY AT NDIMENSIONS, WE PARTNER WITH SCHOOLS AND PROVIDE COURSES ON ENTREPRENEURSHIP AND ALSO GIVE STUDENTS AN ONLINE PLATFORM TO DISCUSS AND VALIDATE THEIR IDEAS. THE REASON WHY WE STARTED NDIMENSIONS IS THAT WE WANTED TO BREAK THE SOCIO-EDUCATIONAL STEREOTYPES IN OUR SOCIETY WHICH STATED THAT WE HAD TO TAKE UP ENGINEERING OR MEDICINE TO SUCCEED IN LIFE.

A SURVEY STATES THAT LESS THAN 8% OF ENGINEERS ARE EMPLOYABLE. TO CHANGE THIS SCENARIO, WE NEED MORE JOB PROVIDERS THAN JOB SEEKERS. WE NEED MORE SKILLED PEOPLE, AND YOU CAN BECOME HIGHLY SKILLED IN SOMETHING ONLY IF YOU LOVE WHAT YOU DO. YOU CAN BECOME BETTER ONLY IF YOUR 'WHY' IS STRONG AND THAT 'WHY' SHOULD LEAD YOU TO DO WHAT YOU DO, NOT THESE SOCIO-EDUCATIONAL STEREOTYPES. TO SOLVE ALL THE ABOVE MENTIONED PROBLEMS, THE ONLY TOOL THAT CAME TO OUR RESCUE WAS ENTREPRENEURSHIP. AND WE FELT THAT THIS WAY OF THINKING MUST BE DEVELOPED FROM THE VERY ROOTS OF OUR COUNTRY ITSELF - OUR CHILDREN.

BUT THIS PROBLEM WAS SO DEEPLY ROOTED IN OUR SOCIETY, THAT IT WAS BECOMING NEARLY IMPOSSIBLE FOR US TO SIT IN A ROOM AND SOLVE. WE TRIED TO COME UP WITH VARIOUS SOLUTIONS, BUT NOTHING BORE FRUITS FOR OUR WORK. WE SACRIFICED A LOT ALONG THE PATH, PUT OUR HEART AND SOUL INTO MAKING THINGS HAPPEN, BUT THEY WERE NOT HAPPENING. AND OUR FINAL ATTEMPT IS NLIGHTEN, A COMPLETELY NON-PROFIT NATION-WIDE AWARENESS CAMPAIGN THAT SOLELY AIMS TO ENLIGHTEN STUDENTS ABOUT ENTREPRENEURSHIP. AND IT STARTS THIS DECEMBER. AS A PART OF THIS CAMPAIGN, WE WILL REACH OUT TO A MINIMUM OF 8000 STUDENTS THROUGHOUT INDIA BY GOING TO SCHOOLS AND GIVING A SMALL COURSE ON ENTREPRENEURSHIP AND ALSO PROVIDE THEM WITH A HALF-HOUR LONG LIVE SESSION WITH OUR MENTORS. ALSO, WE WILL START OUR ONLINE CAMPAIGN SOON WHICH CONSISTS OF EVENTS SUCH AS ENTREPRENEURS TALK AND AROUND THE WORLD. IN THE EVENT ENTREPRENEURS TALK, WE WILL SHARE VIDEOS FROM EMINENT ENTREPRENEURS ON WHAT SUCCESS MEANS TO THEM AND A LITTLE ABOUT THEIR ENTREPRENEURIAL JOURNEY TO INSPIRE THE STUDENTS. AND AS PART OF AROUND THE WORLD, WE WILL SHARE THE VIDEOS OF WHAT PEOPLE FROM AROUND THE WORLD THINK OF ENTREPRENEURSHIP, HOW IT IS PERCEIVED IN THEIR COUNTRY AND HOW IT HAS HELPED OR WILL HELP THEIR COUNTRY IN DEVELOPING FURTHER.



nDimensions

Bringing out the you in you...



R.M. AJITH KUMAR  
(CEO & FOUNDER)

nLighten



# 7<sup>TH</sup> EDITION



**nDimensions**  
Bringing out the you in you...



FOR THE NLIGHTEN CAMPAIGN, WE HAVE A CORE TEAM OF 20 PEOPLE SPANNING THE ENTIRE COUNTRY, MOST OF WHOM ARE FOUNDERS OF THEIR OWN STARTUPS. AND WE WILL BE TAKING INTERNS TOO TO EXECUTE THIS CAMPAIGN.

AND AS OF NOW WE HAVE QUITE A FEW PARTNERS THAT INCLUDE STARTUPS/ COMPANIES SUCH AS COLINKERS, DIGITALANT.IN, ARCHPHILIC AND SO ON, AND WE HAVE ALSO PARTNERED WITH OUR OWN CAMPUS-GROWN STARTUPS NAMELY 3N TECHNOLOGIES AND TECTARDS. NOT ONLY THAT, WE HAVE ALSO PARTNERED WITH INSTITUTES SUCH AS IIT GUWAHATI, DELHI TECHNOLOGICAL UNIVERSITY, KIIT AND OUR INSTITUTE AS WELL. AND ALSO, AS MENTIONED ABOVE, WE HAVE A HANDFUL OF MENTORS TO HELP AND GUIDE.

DESPITE LIMITED RESOURCES AND OTHER CONSTRAINTS, WE ARE CONFIDENT OF REACHING OUT TO ABOUT 8000 STUDENTS IN 30 DAYS AND BRINGING IN THE CHANGE THAT WE ASPIRE AND FULFILL THE VISION TOWARDS WHICH WE WORK FOR, BECAUSE WE FIRMLY BELIEVE IN THE WORDS OF GEORGE CLOONEY, WHO SAID, "THE ONLY FAILURE IS NOT TO TRY".

FOR FURTHER INFORMATION ON THIS CAMPAIGN VISIT [NDIMENSIONS.CO.IN/NLIGHTEN](http://NDIMENSIONS.CO.IN/NLIGHTEN)  
WE ARE VERY PROUD OF THIS BUDDING ENTREPRENEUR'S INITIATIVE, AND WISH HIM ALL THE VERY BEST IN WHATEVER HE DOES. GO FOR IT AJITH!

## INSTITUTE PARTNERS

E-CELL, DTU  
E-CELL, IIT GUWAHATI  
IIIT GUWAHATI  
E-CELL, IIM INDORE  
I-CUBE: E-Cell, IIM SHILLONG  
E-CELL, KIIT  
SEC: E-Cell, MANIPAL UNIVERSITY

OUTREACH PARTNERS  
ARCHPHILIC  
CO-LINKERS  
DIGITALANT.IN  
NEXTIZUS  
TECTARDS  
TRANSTREET  
3N TECHNOLOGIES

## INCUBATION PARTNERS

ICREATE  
IB HUBS

COMMUNITY PARTNERS  
STARTUP BYTE

CROWDFUNDING PARTNER  
CATAPOOLT





7<sup>TH</sup>  
EDITION

# Indoor sports events of "Yuvaan" allure masses



SOURISH DHEKANE

AS "YUVAAN" IS SEEN AS A BIG PLATFORM FOR IIITGIANS TO EXHIBIT THEIR SKILLS IN THE GAMES, THIS YEAR'S INDOOR SPORTS EVENTS WERE MARKED WITH AN OVERWHELMING PARTICIPATION, NAIL-BITING MATCHES AND DISPLAY OF SOME MAD SKILLS. THIS YEAR, SPECIAL ORGANIZERS WERE CHOSEN TO CONDUCT THE SPORTS EVENTS.



THE CHESS TOURNAMENT WAS ORGANIZED BY "RUSHIKESH SHIMPI" (1ST YEAR) AND IN TOTAL 41 PLAYERS PARTICIPATED WITH 5 ROUNDS OF PLAY. THE TOURNAMENT IS IN ITS QUARTERFINALS' STAGE AND SOME INTENSE STRATEGIC PLAYS ARE NOW EXPECTED IN FURTHER ROUNDS.



ONE OF THE BIGGEST SPORTS EVENTS WAS THE CAROM TOURNAMENTS WHERE 42 BOYS AND 8 GIRLS PARTICIPATED. IT WAS ORGANIZED BY "BIBEK GOSWAMI" (2ND YEAR) AND THE MATCHES WERE PLAYED FOR MEN'S DOUBLES AND WOMEN'S SINGLES TITLES. THE LONG AWAITED GRAND-FINALS WILL TAKE PLACE THE NEXT SEMESTER.





**7<sup>TH</sup>**  
**EDITION**



THE TABLE-TENNIS MEN'S SINGLES TOURNAMENT WAS CONDUCTED BY "ADITYA SINGH" (3RD YEAR) WITH A MASSIVE PARTICIPATION OF 48 STUDENTS. THE PARTICIPANTS WERE DIVIDED INTO 4 POOLS AND THEN A GROUP OF 32 WAS MADE WHICH LEAD TO A SERIES OF KNOCKOUT MATCHES. AFTER SOME REALLY INTENSE MATCHES, "SAURANIL DEBARSHI" (3RD YEAR) SECURED 1ST POSITION WHEREAS "AMIT PRAKASH" (2ND YEAR) AND "RISHABH CHAUDHARY" (3RD YEAR) SECURED 2ND AND 3RD POSITIONS RESPECTIVELY. AFTER HAVING EXPERIENCED SUCH THRILLING GAMES, IT IS EXPECTED THAT THE WOMEN'S SINGLES AND MEN'S DOUBLES TOURNAMENTS WHICH ARE GOING TO BE HELD IN THE NEXT SEMESTER, WOULD BE AS EXCITING AS THIS EVENT.



THE KEY ATTRACTION OF THIS INDOOR SPORTS EVENTS WAS THE "LAN GAMING" COMPETITIONS. THIS YEAR EVENTS OF "FIFA" AND "COUNTER STRIKE" WERE HELD AND BOTH OF THEM WITNESSED TREMENDOUS PARTICIPATION, SUPPORT AND PUBLICITY. FIFA WAS ORGANIZED BY "UDDIPAK BHUYAN" (2ND YEAR) AND OVER 22 PLAYERS PARTICIPATED FOR THE TITLE. THE TOURNAMENT IS IN ITS QUARTER-FINAL STAGE AND IT WILL DEFINITELY BE THRILLING TO WITNESS WHO BECOMES THE "KING OF CONTROLLER" IN THE NEXT SEMESTER.



THE PINNACLE OF THE LAN GAMING EVENTS WAS THE "COUNTER STRIKE" TOURNAMENTS. IT WAS THE BIGGEST OF ALL IN TERMS OF PARTICIPATION, EXCITEMENT AND GLORY! THIS YEAR, 13 TEAMS (65 PLAYERS!) PARTICIPATED IN IT, MAKING IT THE LARGEST SPORT EVENT EVER ORGANIZED IN IIITG. THE CREDIT OF IT GOES TO "DILLESH KUMAR" (2ND YEAR) AND "RIKITH REDDY" (4TH YEAR) FOR ORGANIZING SUCH A MASSIVE EVENT. EVERY SINGLE MATCH PLAYED WAS A TREAT TO WATCH FOR ALL THE HARD-CORE GAMERS IN IIITG. AFTER SOME FURIOUS BATTLES AND INTENSE CLUTCHES, "TAURS CLAN" (SOURISH, KAUSHIK, DILLESH, KUASTAV, MRIDUSMITH) BECAME THE CHAMPIONS OF CS:SOURCE TOURNAMENTS AND "BLIND ASSASINS" (RIKITH, ATHUL, BISWA, PAWAN, PRATIK) WERE ANNOUNCED AS RUNNER-UP.



OVERALL, THE SMOOTH ORGANIZATION AND ADEQUATE TECHNICAL AND FINANCIAL SUPPORT (THANKS TO GENERAL SECRETARY OF SPORTS "ASHISH KESHARI") LEAD TO A SUCCESSFUL TOURNAMENT. NOW, AN EVEN MORE EXCITING EVENT OF OUTDOOR SPORTS IS WHAT EVERYONE IS LOOKING FOR!



## EDITION

# **IIITG's Literary Queen- Ankita Baruah**



# **SHOBHIT BHATNAGAR**

**"YOUR INTERNSHIP STORY"**, IS A NATIONWIDE ONLINE CONTEST, ORGANIZED BY THE POPULAR WEBSITE '[WWW.INTERNSHALA.COM](http://WWW.INTERNSHALA.COM)' (THE INTERNSHIP PARTNER OF AICTE). IT GIVES STUDENTS A PLATFORM TO SHARE THEIR INTERNSHIP STORIES WITH THEIR PEERS SO THAT OTHERS CAN BENEFIT FROM THEIR EXPERIENCES. ANKITA BARUAH, OF THE BATCH OF 2014, LEARNT ABOUT THIS CONTEST WHEN DR. SHIRSHENDU DAS FORWARDED A MAIL SENT FROM THEIR MANAGER. SHE DECIDED TO PARTICIPATE AND SENT HER ENTRY, HAVING HAD FRESH EXPERIENCE AS AN INTERN AT IIT BOMBAY. AS SHE SAYS HERSELF, "WITH A BIT OF LUCK, MY ARTICLE WAS ONE AMONGST THE 140 SELECTED ENTRIES, AMIDST A POOL OF 6000 COMPETITORS, TO GET PUBLISHED. NEEDLESS TO SAY, I WAS ELATED TO SEE MY WORK ON THEIR BLOG. I HOPE THE READERS OF HERALD WILL LIKE IT AS WELL."

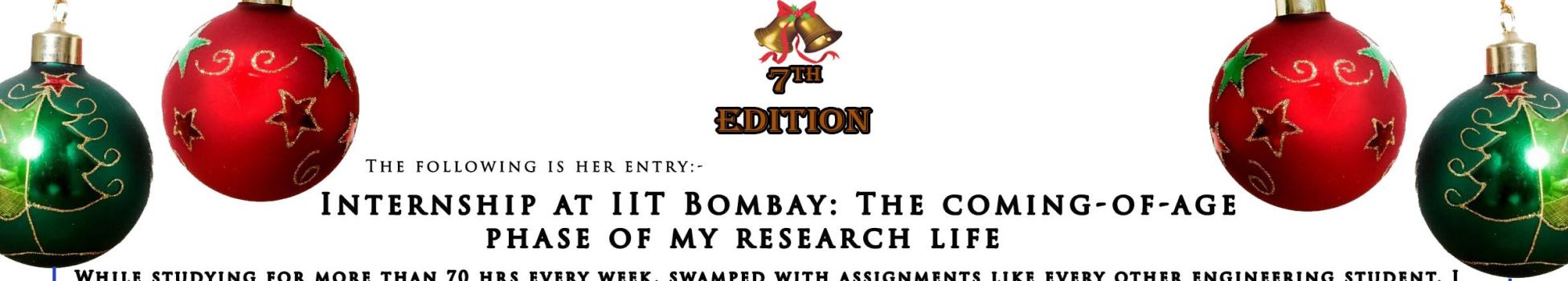


## Internship at IIT Bombay: The coming-of-age phase of my research life

September 12, 2017



**About the Author:** Ankita Baruah, a student of Indian Institute of Information Technology, Guwahati, talks about her internship experience at IIT Bombay and how she loved every moment of her journey.



7<sup>TH</sup>  
**EDITION**

THE FOLLOWING IS HER ENTRY:-

## INTERNSHIP AT IIT BOMBAY: THE COMING-OF-AGE PHASE OF MY RESEARCH LIFE

WHILE STUDYING FOR MORE THAN 70 HRS EVERY WEEK, SWAMPED WITH ASSIGNMENTS LIKE EVERY OTHER ENGINEERING STUDENT, I WAS PLEASANTLY SURPRISED TO LEARN THAT I HAD WON A SCHOLARSHIP! I HAD BEEN SELECTED UNDER THE ISHAN VIKAS SUMMER INTERNSHIP SCHEME, A MERIT BASED, COMPREHENSIVE, AND HIGHLY COMPETITIVE PROGRAM FOR THE GOVERNMENT-FUNDED TECHNICAL COLLEGES OF THE NORTH-EASTERN STATES OF INDIA. ALL EXPENSES OF TRAVEL, FOOD, AND ACCOMMODATION ARE BORNE BY THE INDIAN GOVERNMENT. THE APPLICATION PROCEDURE IS SIMPLE. AS YOU HAVE TO PROVE THAT YOU ARE STUDYING IN THE NORTHEAST, IN MY CASE GUWAHATI, YOU NEED TO APPLY THROUGH YOUR COLLEGE SUPERVISORS. IF YOU ARE AMONG THE TOP 10 STUDENTS OF YOUR CLASS, YOUR SUPERVISOR FORWARDS YOUR NAME TO IIT GUWAHATI. FOLLOWING THIS, BASED ON ALL THE NOMINATIONS SENT TO THEM, IIT GUWAHATI DOES THE FINAL SELECTION.

I WAS THRILLED WHEN I CAME TO KNOW THAT I WAS SELECTED FOR THE SCHOLARSHIP AND COULD PURSUE MY INTERNSHIP AT IIT BOMBAY. AT FIRST, I WAS APPREHENSIVE ABOUT HOW THE CITY OF DREAMS WOULD TREAT ME, A NERD FROM THE HILLS. I REACHED THE POWAI CAMPUS ON 15TH MAY AND WAS SWEPT AWAY BY THE IMMENSE VISUAL APPEAL OF THE HUGE CAMPUS. SURROUNDED BY A GREEN COVER OF HILLS, TREES, AND LAKES, THE WHOLE AREA WAS A COLLAGE OF FUNKY MODERN ARCHITECTURE, HUGE OPEN SPACES, AND THE OLD BUILDINGS OF RICH HERITAGE. THE ATMOSPHERE WAS ENERGETIC AND WITH THE YOUNG AND SPIRITED CROWD, ONE COULD SENSE THE CREATIVITY AND ENTHUSIASM ALL AROUND. MY MENTOR FOR THE INTERNSHIP WAS PROF. MADHU N. BELUR FROM THE ELECTRICAL ENGINEERING DEPARTMENT. HE WAS VERY CORDIAL AND EXTREMELY HELPFUL THROUGHOUT MY INTERNSHIP. I WAS TAKEN ON A TOUR OF THE LABS AND WAS INFORMED OF THE VARIOUS PROJECTS GOING ON AT IIT BOMBAY, SUCH AS A PYTHON-BASED INITIATIVE OF MAKING TEXTBOOKS AND SOLUTION GUIDES AVAILABLE IN DIGITAL FORMAT THROUGHOUT INDIA FOR EASY AND FREE ACCESS TO STUDENTS, A COLLECTION OF SPOKEN TUTORIALS BY PROF. KANNAN MOUDGALYA AIMED AT TEACHING ANY COMPUTER LANGUAGE OR SOFTWARE VIA VOICE TUTORIALS IN ALL MAJOR INDIAN LANGUAGES, SOME IMPORTANT OPEN-SOURCE PROJECTS FOR INDIAN RAILWAYS, ETC.

I WAS ALL PUMPED-UP AND BEGAN MY INTERNSHIP UNDER MY PROJECT GUIDE, MADHUMITA DATE MA'AM, FROM WADHWANI ELECTRONICS LABORATORY (WEL) IN THE DOMAIN OF MICROPROCESSORS. I WAS ADVISED TO WORK ON A SIGNAL FILTERING APPLICATION ON AN AT89C5131 MICROCONTROLLER, BASED ON 8051 ARCHITECTURE, AS SUCH KIND OF WORK HAD NOT BEEN DONE AT WEL BEFORE. THE PRACTICAL REQUIREMENTS FOR SUCH AN APPLICATION HAVE RISEN IN TODAY'S WORLD. AS EMBEDDED APPLICATIONS ARE INCREASINGLY HANDLING VOICE, VIDEO, AND OTHER HIGH-SPEED DATA, THE NEED FOR FILTERING IN TRANSMISSION AND RECEPTION OF DIGITAL SIGNALS IS NOW A MAJOR CHALLENGE FOR INEXPENSIVE, LOW-POWER MICROCONTROLLERS (MCUS). MCU MANUFACTURERS HAVE ADDED DIGITAL SIGNAL PROCESSING FUNCTIONS TO EXPAND THEIR CAPABILITIES, CREATING A CLASS OF DIGITAL SIGNAL CONTROLLERS (DSCS). MY PROJECT HAD TO ILLUSTRATE AT FIRST, THE CONSTRUCTION OF SUCH A LOW-COST MCU THAT CAN ACT AS A DSC. THEN I HAD TO WRITE THE SOFTWARE CODE FOR A LOW PASS FILTER APPLICATION AND CONDUCT A DEMONSTRATION TO PROVE THAT IT COULD BE SUPPORTED BY THE MCU, AND COULD BE USED FOR SIGNAL FILTERING AND RECONSTRUCTION.

I MUST SAY THAT I WAS A TAD BIT DISAPPOINTED, AT FIRST, AS I DID NOT HAVE A LOT OF HELP IN FIGURING OUT THE TECHNICALITIES OF MY WORK. HOWEVER, LATER I REALISED THAT THIS WAS MAINLY BECAUSE IIT-B IS EXTREMELY INSISTENT ON STUDENTS DEVELOPING THEIR OWN ORIGINAL AND INNOVATIVE PROJECTS. I HAD ALL THE HELP REGARDING THE INFORMATION OF THE REQUIRED HARDWARE AND SOFTWARE, BUT I WAS SOLELY RESPONSIBLE FOR THE ACTUAL CONSTRUCTION OF THE APPLICATION FROM SCRATCH. IT WAS NERVE WRACKING INITIALLY, AND I PRACTICALLY LIVED IN THE LAB FOR THE FIRST TWO WEEKS, TRYING TO DEVELOP MY LINE OF THOUGHT ABOUT HOW TO PROCEED. IN THE END, HOWEVER, IT WAS ALL WORTH IT AS I HAD GATHERED IMMENSE KNOWLEDGE ABOUT EACH AND EVERY POSSIBLE NUANCE OF MY ENTIRE PROJECT DOMAIN. TODAY, I CAN SAY WITH CONFIDENCE THAT I WOULD NEVER HAVE LEARNED SO MUCH OR THAT I WOULD NEVER HAVE BELIEVED THAT I WAS EVEN CAPABLE OF COMPLETING A MAJOR RESEARCH PROJECT ALL ON MY OWN IF MY GUIDE AND THE LAB INSTRUCTORS HADN'T PUSHED ME TOWARDS IT. IIT B GAVE ME THE BIGGEST GIFT OF MY RESEARCH LIFE IN THOSE TWO MONTHS: SELF-CONFIDENCE AND THE ABILITY TO APPLY THEORETICAL KNOWLEDGE IN PRACTICAL WORK. THE HOSTEL LIFE WAS FUN TOO. I STAYED AT RECENTLY BUILT HOSTEL 15 C WHICH HAD EVERY FACILITY A STUDENT COULD HOPE FOR. I LIVED WITH PEOPLE WHO HAD BIG DREAMS AND WERE CLEAR ABOUT HOW THEY WERE GOING TO ACHIEVE THEM. LIKE STEVE JOBS ONCE SAID, "THE ONLY WAY TO DO GREAT WORK IS TO BELIEVE THAT YOU ARE DOING GREAT WORK." AT IIT B, PEOPLE BELIEVE IN THE GREATNESS OF SCIENCE AND ITS IMPACT ON MAKING LIVES BETTER. AS I SIT ON MY DESK, BACK AT HOME, WRITING THIS ARTICLE AND RELIVING THOSE DAYS, I WISH I COULD DO IT ALL AGAIN, JUST TO GET THAT OVERWHELMING FEELING OF KNOWLEDGE AND INDEPENDENCE THAT IS UNIQUE TO IIT B.



# Proving IIITG's Mettle – Raushan Kumar



PALAK KAPOOR

IIITG WAS PRIMARILY SET UP TO ADVANCE INNOVATION AND TECHNOLOGICAL DEVELOPMENT IN THE COUNTRY BY TRAINING ITS STUDENTS TO HARNESSE THEIR POTENTIALS TO THE EXTREMITIES. THAT IIITG HAS BEEN SUCCESSFUL IN DOING SO, RAUSHAN KUMAR, AN ELECTRONICS AND COMMUNICATION ENGINEERING STUDENT OF THE BATCH OF 2013 (IIITG'S VERY FIRST BATCH!), STANDS AS INDISPUTABLE TESTIMONY.

THE GLOBAL ENTREPRENEURSHIP SUMMIT (GES) 2017 WAS ORGANIZED BY NITI AAYOG IN PARTNERSHIP WITH THE GOVERNMENT OF THE UNITED STATES OF AMERICA. THE INTERNATIONALLY POPULAR WORLD-CLASS SUMMIT WAS HOSTED IN HYDERABAD FROM NOVEMBER 28-30, 2017. THE SUMMIT WAS INAUGURATED BY THE HON'BLE PRIME MINISTER OF INDIA, SHRI NARENDRA MODI, WITH THE DELEGATE FROM THE UNITED STATES OF AMERICA BEING LED BY MS. IVANKA TRUMP, ADVISOR TO PRESIDENT TRUMP.

INVENTO ROBOTICS, OF WHICH RAUSHAN KUMAR WAS A PART AS AN ELECTRONICS ENGINEER, HAD BUILT A LARGE HUMANOID ROBOT, CALLED MITRA, THAT COULD MOVE AROUND AND GREET DIGNITARIES. MITRA CHARMED AND AMAZED ALL PRESENT, AS IT WAS THE ONLY ONE OF ITS KIND. AMUL USED MITRA IN MAKING ITS SIGNATURE BILLBOARD. THE PM TWEETED ABOUT IT AND HIS OFFICE FEATURED THE ROBOT ON THEIR HOMEPAGE. IN FACT MANY PEOPLE ALSO TOOK SELFIES WITH IT! IT FILLS THE IIITG FAMILY WITH GREAT PRIDE THAT RAUSHAN WAS AN INTEGRAL PART OF SUCH A SUCCESS, PROVING HIS TECHNOLOGICAL, INNOVATIVE AS WELL AS ENTREPRENEURIAL PROWESS. WE WISH HIM SUCH PHENOMENAL SUCCESS IN ALL HIS FUTURE VENTURES AS WELL.



RAUSHAN KUMAR  
(ECE 2013)



GLOBAL ENTREPRENEURSHIP SUMMIT  
INDIA 2017





EDITION

# The Interplay of Biology and Information Technology

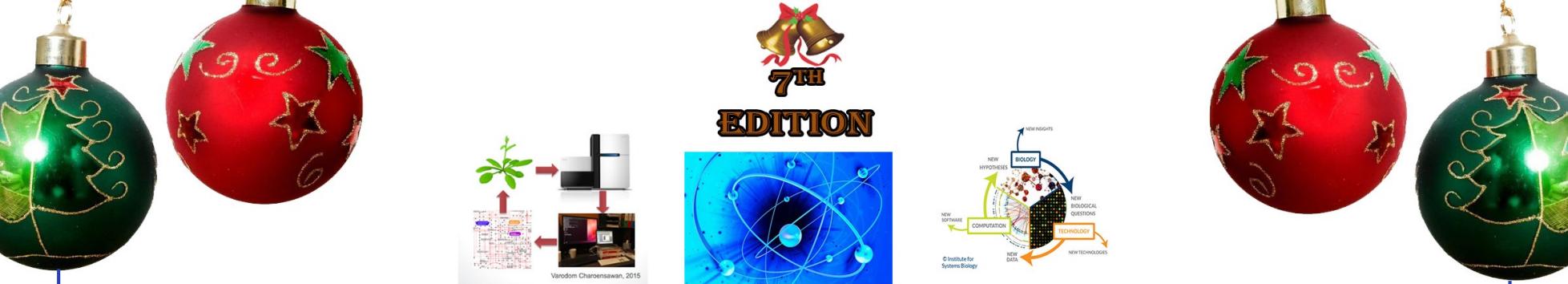


DR. REKHA DEKA

## THE IMPACT OF INFORMATION TECHNOLOGY IN BIOLOGY

BIOLOGY, THE SCIENTIFIC STUDY OF ORGANISMS, CONTRIBUTED TOWARDS OUR KNOWLEDGE OR INFORMATION RELATED TO ALL ASPECTS OF ORGANISMS. INFORMATION TECHNOLOGY (IT) HAS ENABLED US TO ACQUIRE, STORE, PROCESS, AND INTERPRET ENORMOUS AMOUNTS OF SYSTEMIC DATA. THE INFORMATION TECHNOLOGY (IT) IS USED IN A WIDE VARIETY OF APPLICATIONS IN BIOSCIENCES AND SIGNIFICANTLY CONTRIBUTED TOWARDS ADVANCEMENT OF "BIOINFORMATICS". SINCE THE DISCOVERY IN THE 1950S OF HOW GENETIC INFORMATION IS CODED IN DNA, THE BIOSCIENCES HAVE INCREASINGLY BECOME MUCH MORE DEPENDENT ON INFORMATION TECHNOLOGY. BIOSCIENCE RESEARCH NOW INVOLVES DECIPHERING THE INFORMATION STORED IN GENETIC SEQUENCES, UNDERSTANDING HOW THESE SEQUENCES CODES FOR GENES AND PROTEINS, AND UNDERSTANDING THE FUNCTION AND STRUCTURE OF THESE PROTEINS. IN A SENSE, BIOLOGY HAS BECOME DRIVEN BY THE INFORMATION CONTAINED IN THE GENETIC CODE, AND INFORMATION TECHNOLOGY IS CRITICAL IN GENERATING AND MANAGING THIS INFORMATION. THE INTERNATIONALLY COLLABORATED HUMAN GENOME PROJECT (HGP), OPERATED FROM 1990 TO 2003 TO SEQUENCE THE HUMAN GENOME, HAS SUCCESSFULLY DETERMINED, STORED, AND MADE PUBLICLY AVAILABLE THE SEQUENCES OF ALMOST ALL THE GENETIC CONTENT OF THE CHROMOSOME OF HUMAN. THE HGP FINDINGS REVEALED THAT THE HUMAN GENOME SIZE IS 3.3 BILLION BASE PAIRS CONTAINING APPROXIMATELY 22,300 PROTEIN-CODING GENES. THE GENOME SEQUENCING OUTCOME GENERATED VAST AMOUNTS OF DATA RELATED TO GENES, THEIR FUNCTIONS, AND THEIR EXPRESSION PATTERNS. IT USED SOPHISTICATED COMPUTATIONAL AND MATHEMATICAL APPROACHES IN STORING, MANAGING AND ANALYSIS OF THE ENORMOUS AMOUNT OF GENOME SEQUENCE DATA AND MADE IT PUBLICLY AVAILABLE IN USER-FRIENDLY DATABASES SUCH AS NCBI GENBANK, UCSC GENOME BROWSER, AND THE SANGER INSTITUTE'S ENSEMBL DATABASE. THE IT AIDED INSTRUMENTS SUCH AS GENE SEQUENCER, DNA MICROARRAY, AND MICROSCOPE ARE USED FOR DATA COLLECTION. TODAY, THE AUTOMATED GENE SEQUENCER CAN PRODUCE ON THE ORDER OF A MILLION BASE PAIRS OF RAW DNA SEQUENCE DATA PER DAY. MICROARRAY ANALYSIS, A HIGH THROUGHPUT TECHNOLOGY THAT MONITORS THE EXPRESSION PROFILES OF TENS OF THOUSANDS OF GENES SIMULTANEOUSLY, IS EXTENSIVELY USED IN DISCOVERING THE MOLECULAR PATHWAY OF GENES, TOXICITY, PATHOGEN IDENTIFICATION AND MANY OTHER APPLICATIONS. COMPUTATIONAL DATA ANALYSIS TASKS SUCH AS DATA MINING THAT INCLUDES CLASSIFICATION AND CLUSTERING IS USED TO EXTRACT USEFUL KNOWLEDGE FROM MICROARRAY DATA. INTERNET ACCESSIBLE SHARED DATABASES SUCH AS GENE AND PROTEIN DATA BANKS (PDB) ALLOW MANY RESEARCHERS TO OBTAIN AND CONTRIBUTE DATA TO LARGE PROBLEMS. THE MAIN PURPOSE OF PDB IS TO ORGANIZE THREE DIMENSIONAL STRUCTURAL DATA OBTAINED FROM EXPERIMENTAL METHODS SUCH AS X-RAY CRYSTALLOGRAPHY, NUCLEAR MAGNETIC RESONANCE (NMR) SPECTROSCOPY, AND ELECTRON MICROSCOPY. PDB CONTAINS STRUCTURAL DATA OF LARGE BIOLOGICAL MOLECULES SUCH AS PROTEINS AND NUCLEIC ACIDS OF ALL THE ORGANISMS INCLUDING BACTERIA, YEAST, PLANTS, FLIES, OTHER ANIMALS AND HUMANS. MOREOVER, THERE ARE SOME SYSTEMS THAT ARE TOO INTRICATE TO STUDY WITHOUT ADVANCED COMPUTATIONAL TOOLS FOR MANAGING AND INTEGRATING THE DATA INTO MECHANISTIC MODELS. FOR EXAMPLE, COMPUTER-AIDED ALGORITHMS ARE BEING USED FOR BUILDING INTEGRATED MODELS OF CELLULAR PROCESSES. IN ADDITION, SYSTEMS BIOLOGY IS ONE OF THE EMERGING BRANCH OF COMPUTATIONAL BIOLOGY THAT AIDS TO MODEL AND SIMULATE VARIOUS SYSTEMS AND VISUALIZE THE RESULTS TO HELP BETTER UNDERSTAND LIVING PROCESSES.

ANOTHER APPLICATION OF COMPUTATION METHODS IS MOLECULAR DOCKING THAT HAS BEEN EXTENSIVELY USED IN DRUG DISCOVERY, AND TO MODEL THE INTERACTION BETWEEN A SMALL MOLECULE AND A PROTEIN AT THE ATOMIC LEVEL. THE DOCKING PROCESS INVOLVES TWO IMPORTANT STEPS, FIRST BY SAMPLING CONFORMATIONS OF THE LIGAND IN THE ACTIVE SITE OF THE PROTEIN, FOLLOWED BY RANKING THESE CONFORMATIONS VIA A SCORING FUNCTION. SEVERAL ALGORITHMS AND SOFTWARE SUCH AS MATCHING ALGORITHMS, INCREMENTAL CONSTRUCTION, MULTIPLE COPY SIMULTANEOUS SEARCH (MCSS), LUDI, MONTE CARLO, GENETIC ALGORITHMS AND MOLECULAR DYNAMICS, DOCK, FLOG, LIBDOCK, SANDOCK, FLEXX, GOLD, DIVALI, AND DARWIN ARE COMMONLY USED FOR SAMPLING AND DOCKING PROCESSES.



# 7<sup>TH</sup> EDITION

THE CONVERGENCE OF BIOLOGY AND ELECTRONICS RESULTED IN THE EMERGENCE OF A NEW DISCIPLINE CALLED "BIOELECTRONICS". THIS IS AN INTERDISCIPLINARY FIELD THAT INTEGRATES ELECTRONICS AND COMPUTER SCIENCE WITH BIOLOGY, MEDICINE AND APPLIED SCIENCES TO SOLVE PROBLEMS RELATED TO DESIGN MANUFACTURING AND MAINTENANCE OF MEDICAL DEVICES AND HELP TO INCREASE THE SPAN AND QUALITY OF OUR LIVES. WIRELESS PATIENT MONITORING AND DIAGNOSTICS AS WELL AS INTELLIGENT MEDICAL IMAGING ARE AMONG THE HIGH PRIORITY BIOELECTRONICS RESEARCH TOPICS. THE ELECTRONIC SYSTEMS IN MEDICAL IMAGING SUCH AS MRI, CT SCANS AND POSITRON EMISSION TOMOGRAPHY (PET) TRANSFORMED THE MEDICAL PRACTICE TO TREAT PHYSICAL INJURIES AND PLANNING SURGERY. TODAY, THE MEDICAL SECTOR IS HIGHLY DEPENDENT ON THE USE OF IT THAT LED TO THE EMERGENCE OF HEALTH INFORMATION TECHNOLOGY (HIT). MEDICAL IMAGES ARE THE DATA WHICH ARE OBTAINED FROM COMPUTED TOMOGRAPHY SCAN (CT), MAGNETIC RESONANCE IMAGING (MRI), AND ULTRASOUND. USING ELECTRONIC COMMUNICATION TECHNOLOGY SUCH AS PICTURE ARCHIVING AND COMMUNICATION SYSTEM (PACS), DATA OF IMAGES ARE STORED IN DIGITIZED FORM ON OPTICAL DISKS AND DISTRIBUTED ON DEMAND OVER A HIGH SPEED LOCAL AREA NETWORK, AND IMAGES CAN BE RECONSTRUCTED GRAPHICALLY WITH VERY HIGH RESOLUTION AT DIFFERENT WARDS OF THE HOSPITAL.

## BIOLOGICAL INSPIRATION FOR COMPUTING

COMPUTING AIMS TO BUILD SYSTEMS THAT CAN FUNCTION WITH HIGH DEGREES OF AUTONOMY WITH MINIMAL HUMAN INTERVENTION, ROBUSTLY HANDLE DATA WITH LARGE AMOUNTS OF NOISE, RAPIDLY PROCESS LARGE AMOUNTS OF DATA IN A MASSIVELY PARALLEL FASHION, CONFIGURE NETWORKS AND RECONFIGURE THEMSELVES WHEN PARTS ARE DAMAGED OR DESTROYED. BIOLOGICAL SCIENCES HELP IN CERTAIN RESEARCH AREAS IN COMPUTING FOR THE DEVELOPMENT OF ALGORITHMS TO SOLVE COMPLEX PROBLEMS BASED ON INSPIRATION FROM NATURE. ARTIFICIAL IMMUNE SYSTEM BASED ON NATURAL IMMUNE SYSTEM, NEURAL NETWORK BASED ON THE FUNCTIONING OF HUMAN BRAIN, AND SWARM INTELLIGENCE BY THE BEHAVIOR OF GROUPS OF ORGANISMS ARE SOME OF THE EXAMPLES. THE ARTIFICIAL IMMUNE SYSTEMS ARE ADAPTIVE COMPUTATIONAL SYSTEMS INSPIRED BY THE MAMMALIAN IMMUNE SYSTEM, AND HAVE BEEN PROPOSED FOR SOLVING PROBLEMS IN ANOMALY DETECTION, DATA ANALYSIS, PATTERN RECOGNITION, COMPUTER AND NETWORK SECURITY, DOCUMENT AND E-MAIL CLASSIFICATION, COLLABORATIVE FILTERING PROBLEM, AND OPTIMIZATION. IMMUNE NETWORK MODELS ARE SUITABLE TO DEAL WITH DATA ANALYSIS AND CLUSTERING. ALGORITHMS BASED UPON THE CLONAL SELECTION PRINCIPLE OF IMMUNE SYSTEM ARE ADEQUATE TO SOLVE OPTIMIZATION PROBLEMS, AND THE NEGATIVE SELECTION STRATEGIES ARE SUCCESSFULLY APPLIED TO ANOMALY DETECTION AND NETWORK SECURITY. NEURAL NETWORKS ARE AMONG THE MOST SUCCESSFUL OF BIOLOGY-INSPIRED COMPUTATIONAL SYSTEMS AND ARE MODELED ON THE MASSIVELY PARALLEL ARCHITECTURE OF THE HUMAN BRAIN. NEURAL NETWORKS HAVE BEEN APPLIED TO A LARGE NUMBER OF REAL-WORLD PROBLEMS OF HIGH COMPLEXITY, INCLUDING OPTICAL CHARACTER RECOGNITION, FINANCE AND MARKETING, SECURITY AND LAW ENFORCEMENT, ROBOT NAVIGATION, DETECTION OF MEDICAL PHENOMENA, STOCK MARKET PREDICTION, CREDIT ASSIGNMENT, MONITORING THE CONDITION OF MACHINERY, AND ENGINE MANAGEMENT.

## SCOPE OF BIOLOGY WITH INFORMATION TECHNOLOGY

BIOLOGY TOGETHER WITH IT IS ALSO GENERATING SEVERAL EMERGING JOBS, SOME OF THESE ARE DISCUSSED BELOW.

(1) **HEALTH INFORMATION TECHNOLOGY:** IN GENERAL, MEDICAL RECORDS OF PATIENTS ARE MAINTAINED PAPER DOCUMENTS. HOWEVER, NOW INITIATIVES HAVE BEEN TAKEN TO DIGITIZE THE PATIENT'S MEDICAL RECORD ACROSS THE GLOBE, AND THIS INTUITIVE IS EXPECTED TO GENERATE MANY JOBS IN THE FIELD OF HEALTH IT PROFESSION IN THE COMING YEARS. THE HEALTH IT PROFESSIONALS ARE EXPECTED TO FIND EMPLOYMENT IN HOSPITALS AND RELATED SERVICE PROVIDERS INCLUDING PUBLIC HEALTH SECTORS. A HEALTH IT PROFESSIONAL NEEDS TO PERFORM SEVERAL DUTIES SUCH AS ASSIGN NUMERIC CODES FOR DIAGNOSIS, GENERATE AND ANALYZE REPORTS, REVIEW MEDICAL CHARTS FOR ACCURACY AND COMPLETION, AND INFORMATION MANAGEMENT. ANOTHER VERY IMPORTANT DOMAIN FOR THE HEALTH IT PROFESSIONALS IS IN THE AREA OF TELEMEDICINE. IN DEVELOPED COUNTRIES, SEVERAL DEGREE PROGRAMS SUCH AS CERTIFIED CODING ASSOCIATE (CCA), REGISTERED HEALTH INFORMATION TECHNICIAN (RHIT), REGISTERED HEALTH INFORMATION ADMINISTRATOR (RHIM) HAVE ALREADY BEEN STARTED. IN THE UNITED STATES OF AMERICA, THESE TYPES OF CERTIFICATION ARE PROVIDED BY SEVERAL HEALTH IT ASSOCIATIONS ORGANIZATIONS SUCH AS AMERICAN ACADEMY OF PROFESSIONAL CODERS, AMERICAN MEDICAL INFORMATION ASSOCIATION, AMERICAN NURSING INFORMATICS ASSOCIATION, ASSOCIATION OF MEDICAL DIRECTORS OF INFORMATION SYSTEMS, HEALTHCARE INFORMATION AND MANAGEMENT SYSTEMS SOCIETY, NATIONAL ALLIANCE FOR HEALTH INFORMATION TECHNOLOGY, NATIONAL ASSOCIATION OF HEALTH DATA ORGANIZATIONS, AND NATIONAL INSTITUTE OF HEALTH CARE MANAGEMENT.

## (2) BIOLOGY AND INFORMATION TECHNOLOGY IN AGRICULTURE:

BIOLOGY IN COMBINATION WITH INFORMATION AND COMMUNICATION TECHNOLOGY IN AGRICULTURE, ALSO CALLED AS EAGRICULTURE, HAS ALREADY OFFERING SOLUTIONS TO AGRICULTURAL SOLUTION, PARTICULARLY IN RURAL AREAS. IN TODAY'S ERA, ORGANIC CULTIVATION HAS GAINED HUGE IMPORTANCE DUE TO ITS BENEFIT TO THE SOIL, ECOSYSTEM, AND HUMAN HEALTH. FERTILIZER DEEP PLACEMENT (FDP) TO REDUCE NITROGEN LOSS, GEOGRAPHIC INFORMATION SYSTEM (GPS) TO AVOID ANIMAL-HUMAN CONFLICT AND FOR PRECISION FARMING, RADIO-FREQUENCY IDENTIFICATION (RFID) FOR ANIMAL TRACKING, AND COMPUTER-CONTROLLED AUTOMATED SYSTEMS SUCH AS AUTOMATIC MILKING, AGRICULTURAL ROBOT, AND DEVELOPMENT OF SMARTPHONE BASED AGRICULTURAL APP ARE SOME OF THE AREAS WHERE BIOLOGY AND IT MAY REVOLUTION THE AGRICULTURAL SECTOR. IN INDIA, JAYALAXMI AGRO TECH PVT LTD ([HTTP://WWW.JAYALAXMIAGROTECH.COM/](http://WWW.JAYALAXMIAGROTECH.COM/)) HAS ALREADY BEEN ACTIVELY INVOLVED IN DESIGNING AND DEVELOPMENT OF THE SMARTPHONE BASED AGRICULTURAL APP.

IN CONCLUSION, BIOLOGY TOGETHER WITH IT HAS CONTRIBUTED ENORMOUSLY TO THE SOCIETY, AND THE COLLABORATION OF THESE TWO AREAS IS EXPECTED TO RISE EVEN MORE IN FUTURE.

  
**7<sup>TH</sup>**  
**EDITION**

# TE MOHER LD

