

NEWS LETTER

From entrepreneurial mindset to action!

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Introduction

Driving economic development through innovative and entrepreneurial efforts is the overwhelming need of the current changing global market. Balancing education with hands-on experience of solving problems faced by society is a core focus of the Center for Entrepreneurship and Innovation (CEI). This newsletter highlights the contribution of the center in creating entrepreneurial culture on the campus, nurturing skill and developing enterprising mindset among students, alumni and faculties and transmitting innovative ideas into ventures.

E-cell activities

A Student driven platform known as 'Entrepreneurship and Innovation Cell (EIC)' conducts different entrepreneurship related activities throughout the year. E-cell activities help in developing entrepreneurial mindset and entrepreneurial intention among our students. Majority of these activities are game-based, they provide learning while having fun and make our students aware of the distinct aspects of entrepreneurship. Such game-based activities include Market Simulation 1 (Introduction to the concept of markets and then members compete to sell the products), Documentary 1 - Marketing (showcased and discussed a collection of videos from around the web, discussing marketing), Resource Gathering + Market Simulation 2 - Resource Gathering (First round: treasure hunt was for each team to acquire resources that had been scattered across the campus, Second round: trying to produce the most creative tools and crafts by participating in intra-company trading and acquire resources), Movie Nights (watching a film which focuses on the world of Business and Entrepreneurship and discuss on the insights the team members got from the film), Industrial visit, Business Idea Competition, Documentary - False startups (discuss the possible ethical, moral, and financial implications of successful entrepreneurs), Negotiation and Newkonomy - Market Simulation-3 (Six-page guideline book, which involved banking, negotiations, retailing, manufacturing, customer satisfaction, bidding war, company mergers) and the Trail of Coins (online treasure hunt revolving around the concept of ideation and negotiation). CEI, in partnership with the Hult Organization (Students Nobel Prize), has organized the first round, the On-Campus round of the world renowned Hult Prize.

E-cell Leadership Team for AY 2021-22



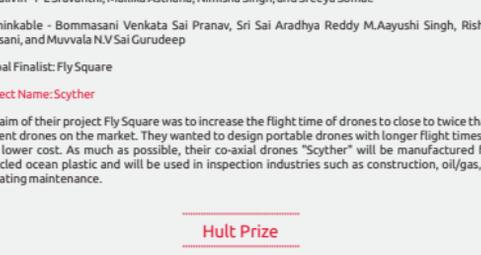
Promoting entrepreneurship through networking

1.1 Babson Collaboration Network Activities
As a member of Babson Collaborative for Entrepreneurship Education, Mahindra University has access to diverse experts, tools and resources for advancing teaching approach, research support and consultancy opportunities. Furthermore, the alumni, employees and students of Mahindra University can apply for any Babson Master's programs including: MS in Business Analytics (MSBA); MS in Finance (MFI); MS in Entrepreneurial Leadership (MSEL); and MS in Management in Advanced Entrepreneurial Leadership (MSAEL). Furthermore, they will get various benefits such as application fee and test waivers, a designated admission specialist to assist applicants through the application process, and if admitted, a \$1,00,000 tuition scholarship.

1.2 Women Entrepreneurship: Babson's Diana International Research Activities
Babson's Diana International Research Activities' platform helps our faculties to expand their network and contribute to different women entrepreneurial related activities.

1.3 Babson Build: The Entrepreneurship Program for University Students - Ug2
Mahindra University has made an agreement with Babson College to involve in Babson Build: The Entrepreneurship Program for University Students - Ug2. This program is one-week academic program which includes lectures, case studies discussion, break-out sessions, videos, group presentations, and discussion on primary and secondary topic areas of entrepreneurship.

Warm Welcome to New Faculty



Prof. Abhinav Chaturvedi is working as Associate Professor in the Center for Entrepreneurship and Innovation. He is a passionate young researcher, brings with him more than a decade of corporate work experience (Shoppers Stop, Titan Industries, Luxor Writing Instruments, Pearson Education, and CDSB) and a fellow from India's prestigious institution XLRI - Xavier School of Management, Jamshedpur. He has worked on a unique topic of Juggad + Juggad based Innovation, and has a keen eye for detail in the field of Innovation and Entrepreneurship. He is an author of a popular title on Customer Relationship Management - An Indian perspective a one of its kind books published back in 2005, now under revision. He can be called a promoter of the avant-garde.

Dr. Sonal Hukampal Singh is working as Associate Professor in the Center for Entrepreneurship and Innovation at Mahindra University. She has completed her PhD from Rajendra Mishra School of Engineering Entrepreneurship, Indian Institute of Technology Kharagpur in the area of grassroots innovation and entrepreneurship. She has worked as Research Fellow in the Department of Systems, Management, and Strategy, Business School, University of Greenwich in the FACET project (Facilitate the Adoption of Circular Entrepreneurship in the Tourism and leisure sector) in area of circular entrepreneurship. She was a Research Associate in Regional Technology Foresight Project funded by Economic and Social Research Council (ESRC) at Information School, the University of Sheffield. Her research interest includes innovation, entrepreneurship, technology adoption, circular practices, social entrepreneurship and sustainable development.

We are looking forward to his contributions in promoting Center for Entrepreneurship and Innovation activities.

We are looking forward to her significant contribution in development of the Center for Entrepreneurship and Innovation.

Student achievements

Smart Farming



Keeping in mind the sustainability and modernization aspects of agriculture, the group of our students have provided a new architectural and technological refinement to obsolete traditional farming methods with their smart farming project. Kunal, a 4th-year student studying Electrical and Electronics Engineering along with his team Kaushik Nandury, Mythri Komuravelli, V Meghana Reddy, Ashritha Akula, Keerthana Gottipati, Parthasarathi Reddy, Cheela Ramu Hemanth, and Ashrith Reddy, have won third prize in the All-India Conclave on Flybss & Fab Semiconductor Ecosystems conducted at an Indian Institute of Technology (IIT) Indore out of the 300 participants. This smart farming project is an attempt to modernize traditional farming techniques whilst still keeping age-old and tested techniques intact like drones monitoring hundreds of acres of land, smart sensors aiding in early infestation detection, & automatic watering systems. The Smart Farming model employs sensors, IoT, smart algorithms, cloud computing, smart irrigation, and much more to provide a more efficient and cost-effective solution to common agricultural errors. Their aim here is to ensure that everyone can use this complicated technology with ease to maximize efficiency, and use resources better at the cheapest possible rate with minimum maintenance. This end goal is met with the help of a mobile application, that the farmers can use to keep track of everything.

Kunal interacted with many agricultural experts, learned agricultural farming theories, built a prototype and approached Dr. Bulusu S.S. Krishna Chaitanya with an idea of smart farming infrastructure. Later, with the help of the professor, he built a strong team. After a lot of hard work and dedication, the team accomplished the dream by building a smart farm within the Mahindra University campus.

The team has also received an official funding/budget (approved) of Rs. 3,00,00 from Mahindra University to bring their project to fruition. They said that it wouldn't have been possible without the constant support and guidance of their professors Dr. Pooran Singh, Dr. K C Bulusu, Dr. Bhaskar Tamma, Dr. Subbarao Boddu, and Dr. Anikita Jain who helped them at every step and motivated them to achieve their goal.

Team members: Keerthana Gottipati, Cheela Ramu Hemanth, Ashritha Akula, Parthasarathi Reddy, Kunal Jaadhav (Team Lead), Mythri Komuravelli, V Meghana Reddy, Kaushik Nandury.

Babson Collaborative Student Challenge (BACHELOR'S LEVEL)



The Babson Collaborative Global Student Challenge involves a feasibility analysis of a new business concept that addresses one or more of the UN Sustainable Development Goals. The Challenge is completed in two phases: a local competition at each participating member institution to determine winning teams, followed by a global competition among the top teams from each institution. In 2021, the Student Challenge engaged 875 student teams from 22 Collaborative member institutions in 16 countries. They presented 215 projects that address the UN SDGs and aim to make the world a better place. 8 teams from Mahindra University have taken part in this Challenge, amongst which 3 teams reached the semi-finals round which was held globally, and one team out of these 3 teams reached the Global Finals. The top three teams from Mahindra University were,

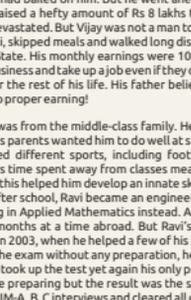
Fly Square- Rahul Arepaka, Prakash Gupta, Ayushi Ghia, Jatin Raj, Shubhika Yadav
Spiruliving- P.L. Sravanthi, Mallika Asthana, Nimisha Singh, and Sreeya Somal.

Unthinkable - Bommasetti Venkata Sai Praveen, Sri Sai Aradhya Reddy, M.Ayushi Singh, Rishitha Tatasani, and Divyavani N.V. Saikumar

Global Finalist: Fly Square
Project Name: Scythor

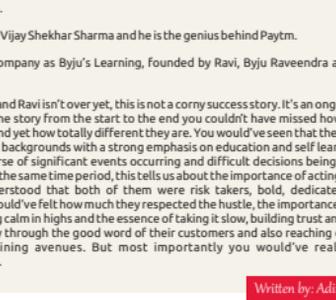
At the aim of their scythor Fly Square was to increase the flight time of drones to close to twice that of a lower cost drone. They wanted to design affordable drones with longer flight times and at a lower cost. As much as possible, their co-axis drones "Scythor" will be manufactured from recycled ocean plastic and will be used in inspection industries such as construction, oil/gas, and elevating maintenance.

Hult Prize



The Hult Prize is an annual, year-long competition that crowdsources ideas from university-level students after challenging them to solve a pressing social issue around topics such as water access, education, food security, and energy. The topic for HULT PRIZE for the year 2021 was "Food For Good" in order to improve the basic need for personal food, this topic was selected. There were 2-3 campus rounds; the prelims and the finals.

The first runners-up of the Hult prize on-campus competition were SPIRULIVING with 4 students, Sravanthi, Mallika, Nimisha, and Sreeya whose idea was to introduce the world's best superfood spirulina to the ever-growing markets. The second runner-ups are group Zyan with Amogha, Akshita, Yasaswini, and Neha whose idea is to partner with organic farmers to collect peculiar-shaped food at lower prices for their restaurant.



Mahindra University organized its third annual R&D showcase, the Mahindra University Research Symposium (MURS), around the theme "Sustainable Development" in which Rahul Arepaka (Mahindra) and Divyavani (MURS) were awarded the oral presentation category. He presented work on Cable Lifted Automated Robots for Agriculture.

Rahul in his own words:
"Hey, I am Rahul Arepaka studying 2nd year in CSE and working on a research project on the side in the field of Vision-Based Continuous Laser Deeping system in mobile robots for a Germany based startup called Farming Revolution GmbH (Weeding Robotics, bosch) along with Prof. Bhargava Sir, Prakash and Rounak from my batch.

I would like to talk about my research on Cable Suspended Robots Robots in the field of Agriculture. My project was called Project CLARA which stands for Cable Lifted Automated Robots for Agriculture.

Our research was inspired by the problem of soil compaction, one of the issues caused by heavy land-based agriculture on the market. Soil compaction causes several problems such as reduced water infiltration rate, low water rates, water ponding, surface water logging, and reduces crop energy and efficiency.

Solving such a problem requires reducing soil contact. While drones can accomplish this, soil and seedling become a huge headache. We came with Clara because the soil was flying away from the vertical pressure/thrust.

CLARA is a CDRP controlled by a suspended cable attached to the corners of the environment. CLARA is similar to the cable robots we see in tennis and cricket tournaments, such as SkyCam and SpiderCam

Over eight different setups were used during this project, which spanned five to six months and began in August 2018. Initially, we attached motors and strings to the corners of the table. In case of a crash landing, I put pillows on the floor and attached strings and hooks to the corners of my house. In the end, we built a 2x2m environment with wooden poles and motors to mount our two modular motion controllers connected by the EV3 and Raspberry Pi.

In terms of electronics, we used Lego-based servo motors with reliable hardware and various gear ratio attachments. Our next step was to daisy-chain communication and electronics, which included Arduino, Raspberry Pi, and laptops.

A computer vision-based detection technology for detecting plants, weeds, and objects, as well as sensors for detecting soil moisture, pH values, light sensors, water level sensors, and safety sensors.

Programming the coordinate system was the hardest part of the project despite consulting every research paper available online. Our initial approach was to use custom coordinates, even discrete-time integrators as the research paper suggested. As a result, we used the old-fashioned distance formulas from high school in 3D space. The coordinates in the 2x2m space were verified.

We won the National Robotics Olympiad in UAE, represented UAE at the World Robotics Olympiad, and were judged by an Amazon AWS expert.

Furthermore, we also developed a similar type of robot for the cleaning of shipping containers using coils and made a proof of concept, and funded the project.

Success of Mahindra e-hub

A state-of-the-art incubation center-Mahindra e-hub assists the innovators for launching, shaping and scaling up new venture. The following section illustrate the story of two budding ventures from our incubation center: Favo Robotics and SpooSense

FAVO ROBOTICS

We are a team of three, Siri Chandana Vedula, Shiva Bhishne and Gayatri Yarragadda, alumni of Mahindra e-hub Centre started up Favo Robotics in 2018 and incubated at Mahindra E-hub. The start-up's journey began with an essential question: "Why is the construction of a house expensive and time-consuming for an average Indian demography?"

We are a robotics start-up based out of Hyderabad, India. We make construction automation accessible by providing affordable automation solutions to the construction industry to increase productivity, thereby reducing the cost of construction. Currently, Favo Robotics is focusing on its flagship product, AutoMason: a masonry collaborative robot. It works in collaboration with 1 operator & 2 helpers to make traditional brickwork in AAC & CC blocks 10 X more productive due to guaranteed precision, levelling & zero to minimal rework. AutoMason is designed to assist the workforce, it fills the acute skilled labour shortage and provides employment to fresh civil engineering graduates. The robot can be repurposed for construction material handling, plastering, painting, and 3D printing.

Favo is one of the winners of GHTC - ASHA, 2019 organized by the Ministry of Housing and Urban Affairs, Government of India and was assigned to IIT Kharagpur for incubation and technical hand-holding during the development of our patented robot for 3D printing in the construction industry. We were part of cohort 10 of Brigade REAP- India's best start-up accelerator recognized by Start-Up India. Along with Brigade REAP, we are also mentored by Terwilliger Center for Innovation in Shelter, Habitat For Humanity, India in the same cohort.

Recently at GHTC IHMT AZADI@75 Expo at Lucknow, PM Modi and many high-level officials from Govt. of India visited our stall. We received tremendous responses from contractors and builders from across India. We are presently gearing up for a bricklaying demo project in Brigade WTC Annex, Bangalore and soon after we will launch our commercial operations across India.

SpooSense

Going through highly uncertain and competitive situation, we have started building SpooSense from scratch and launched initial version on Product Hunt in 2021. We have verified over 20,000 faces in our Private Beta and achieved state of the art performance on some major face anti spoofing protocol. Our team raised over \$185,000 (INR 1.4cr) in seed-funding from 100vc, JITO, Dholakia VC and other marquee angels. Our first client was onboarded India's leading Identity Verification player. We are running pilots with some of India's leading face biometric and Video KYC startups. It is our pleasure to inform that we got featured in Forbes tech podcast. We are changing the way companies interpret faces which will affect the lives of 2.5 Billion people by 2025.

Alumni Achievements

Alumni -Start-up Founders.

Name of Student: **B Ravul Ratnam**
Batch: 2015-2019
Branch: Civil Engineering

Name of the Start-up: **Thorana Designs**
Address: 15-1-463/A, Old Feelikhana, Begum Bazaar Hyderabad, Telangana. 500012

Brief Description of my Venture/Business: Thorana Designs is an Architectural Studio based in Hyderabad and we provide all architectural drawings that include building plans, elevation, structural, electrical and plumbing drawings. We even do Interior Designing and Execution for both commercial and residential spaces. All the rooms including exterior landscaping will be designed according to client requirements and 360 views of the rooms will be provided to client in picture/video format prior to execution of the project. We also do Construction of residential projects from initial land levelling to final décor placement.

Major Achievements: We completed one construction project, 5 interior execution projects, one residential project and 3 architectural projects in span of 1 and half year. Currently, 13 more projects are being executed and we are hoping we increase this number 30 by end of 2022.

Name of Student: **Musthafa Vineeth**
Batch: 2015 -2019
Branch: EEE

Name of the Start-up: **Zaggle Media; IdeaMySpace**
Address: Above Sitara Jewellers, Road no.1, Jubilee Hills, 500033
URL: <http://www.zagglemedia.com> | www.ideamyspace.com

Brief Description of my Venture or Business:
Zaggle Media : Zaggle Media is a digital marketing firm dealing with various influencers such as Influencer Marketing, Social Media Marketing and Design. With more than 9000 influencers onboarded across India, we are the forerunners in the segment having worked with brands like Hyundai, Loreal, Oneplus, Forevermark Diamonds, Asian Paints etc.

IdeaMySpace: IdeaMySpace is a prop tech firm providing 360° home solutions right from architecture to construction to interior interiors to modular units. With our patented AR/VR customized ERP system (ZOH) to meet key automation objectives, I have also worked with the Marketing Department to formulate strategies to improve branding of the company such as - filming a corporate video and also devised an inclusive plan to increase the women workforce in the company.

Major Achievements: With IdeaMySpace we have created a unique AR/VR technology called the I-Sense which is revolutionising the interior design industry. We have raised 1.8 M USD from angel investors as a part of our seed round in December 2021.
With more than 22 strategic partnerships and having successfully executed 94 campaigns for leading brands over the course of 2 years, we are expanding our operations with our new centre in Bangalore.

Alumni- Family Business Successors

Name of Student: **Mayur Gandhi**
Batch: 2015-2019
Branch: Civil engineering

Name of the Business: **Tirumala Venkateshwara Paper and Board Pvt Ltd**
Address: Mancherialy, Telangana

Brief Description of Family Business: TVPB is involved in manufacturing Kraft paper, raw material for corrugated boxes. TVPB is a 100% recycling unit.

My Role in Family Business: Director and Head of production and operations

Major Achievements: I have contributed in developing an ETP system for water treatment and applied DMAIC approach in improving efficiency and reduce downtime for the plant.

Name of Student: **Rizwana Shaik**
Batch: 2015-2019
Branch: Electrical Engineering

Name of the Business: **SSV Fab Industries Pvt. Ltd**
Address: Phase V, Plot No. 7C, 7D, IDA, Jeelimetla - 500055
URL: <https://www.ssvfabindias.com/>

Brief Description of Business Activities:
India's leading manufacturer of Polypropylene and High Density/Low Density Polyethylene Bags. The company provides a comprehensive range of Packaging Bags that conforms to the International quality standards and can be customized for various applications such as packaging of rice, sugar, cement, fertilizers, and food grains. The company has been established 25 years ago with a strong customer base across the country and abroad.

My Role in Family Business: As a Senior Operations Associate, I am responsible to assist the operations manager in daily management, make recommendations for business process improvement and implement the same, prepare and present DSO reports every 3 months to revise credit policy of customers and periodically assist with project management of strategic initiatives to improve business operations. I am also involved in conducting Payment audits regularly to ensure accuracy and work on renewal of ISO Certification.

Major Achievements: The achievements include PV (1) reduced energy by 15% through sustainable practices -> Energy transition to solar PV & lights; (2) reduced manual errors and time to process the payments by automating Payments and Purchases Protocol; (3) implemented a customized ERP system (ZOH) to meet key automation objectives. I have also worked with the Marketing Department to formulate strategies to improve branding of the company such as - filming a corporate video and also devised an inclusive plan to increase the women workforce in the company.

Name of Student: **Nishanth Reddy Gade**
Batch: 2015 - 2019
Branch: EEE

Name of the Business: **Peridot Technologies**
Address: Plot no 41, Samraji Colony, West Marredpally, Secunderabad, Hyderabad, Telangana, India. 500026.
URL: <https://www.peridot-tech.com>

Brief Description of Family Business: Peridot Technologies is an authorized distributor and channel partner for the leading USA and European companies such as Tektronix, Keithley, Weller, Fluke for a wide range of Test and Measuring Instruments and provides tools, development platforms, and turnkey solutions in the areas of Analog, Digital, RF, Microwave, Power & Energy, VLSI & Embedded Design.

My Role in Family Business: I am responsible for business expansion and growth strategies.

Major Achievements: I have played a crucial role in introducing our brand of low-cost power supplies and cable assemblies by sourcing a white label third-party contract manufacturer.

*Inspiring story

A TALE OF TWO PEOPLE

This is the story of two passionate successful entrepreneurs: Vijay and Ravi. Before few years, they were unknown to each other. They belong to the different location of India. Vijay is from the deepest rural remote parts of North India whereas Ravi is from Southernmost tip of the country.

For the long time, Vijay has a fear that he was ineligible to get married a good girl and Ravi was married to Divya for as long as he could remember. These two people have never been more starkly different but in all their dissimilarities, they do have some common interest. That's what makes this story of Vijay and Ravi.

Vijay was from a simple middle-class family in Uttar Pradesh. He has graduated high school at the young age of 14. The challenges started when he decided to move to Delhi to attend college, where he struggled with language barriers as his education up to that point had been in Hindi medium. It had become so difficult that he stopped attending college for a while and having been immensely inspired by the story of Yahoo, decided to teach himself how to code and build a small startup in the Silicon Valley one day. He used the time he wasn't going to college to build a content management system for his college friends, that would then be used by some of the biggest news publications such as the Indian Express. It was also during this time when he started his first job at an MNC, which he quit after six months to start his new venture with his friends. He passed his college examinations too. However, this would also become the darkest time in his life when he faced an extreme financial crisis that in addition to shattering his lifelong dream of reaching Silicon Valley also left him bankrupt because his partners, with whom he had just begun a business and raised the first round of funding for, had bailed on him. But he went ahead with his venture and it was a bold gesture. In 2005, he had raised a hefty amount of Rs 8 lakhs through his venture of which he was owned 40%. He was devastated. But Vijay was not a man to give up so easily. He lived at a hostel near Kashmiri Gate in Delhi, skipped meals and walked long distances to attend work or meetings in the southern part of the State. His monthly earnings were 10,000 rupees and he was urged by his father to close down his business and take up a job even if they offered as low as 30,000 per month or he'd remain a bachelor for the rest of his life. His father believe that who would want to marry a failed businessman with no proper earning!

Ravi was from Kerala. He was from the middle-class family. He grew up studying in the Malayalam medium school. Though his parents wanted him to do well at school, his parents encouraged him to play sports, and he played different sports, including football, cricket, and badminton. At the same time, he was also a very good student. He was very interested in reading and was very good at academics on his own and this helped him develop an innate skill of teaching himself the subjects in the most creative ways. After school, Ravi became an engineer even though he would've preferred to have studied something in Applied Mathematics instead. After graduation, he got an IT job that involved spending many months at a time abroad. But Ravi's life changed over the course of a 2 month break from his job in 2003, when he helped a few of his friends prepare for and clear the CAT exam. And when he took the exam without any preparation, he cleared it too with a 100 percent! Two years later in 2005 he took up the test yet again his only preparation was the help he'd offered his friends when they were preparing but the result was only 51 percent against a 100 percentile. This time he also appeared for IIM-A, B, and C to prepare and present DSO reports every 3 months to revise observed the course of significant events occurring and difficult decisions being made by the two simultaneously in the same time period, this tells us about the importance of acting at the right time. You must've understood that both of them were risk takers, bold, dedicated, confident and calculative. You would've felt how much they respected the hustle, the importance of staying strong in lows and staying calm in highs and the essence of taking it slow, building trust and expanding their ventures naturally through the good word of their customers and also reaching out to the masses through entertaining avenues. But most importantly you would've realized, they were ENTREPRENEURS.

Written by: Aditi Brahmaprasanna

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We would like to thank our E-Cell team members and alumni for their contribution in developing the first issue of newsletter.

Editorial Board: Prof. Rajkumar Phatate

Dr. Sonal Hukampal Singh | Prof. Rajkumar Phatate