

Centre for Product Design and  
Manufacturing

**Indian Institute of Science**



# PD

Placement  
Brochure '24

# Message from the Chairman.

01

## Prof. Amaresh Chakrabarti

Since the initiation of the prestigious MDes Programme in Product Design and Engineering in 1997, and the birth of the CPDM department a year later, faculty and staff of CPDM have been consistently working towards producing professionals in designing technologically challenging products and manufacturing systems that are functional, aesthetic, usable, sustainable and socially impactful; Creating leaders who can strengthen existing practice and develop new practice in the areas of design and manufacturing; Developing knowledge, including methods and tools; And to inform and empower practice and education of design and manufacturing.

CPDM has been graced by some of the most accomplished faculty members of the country, who are pioneering researchers in their areas of research that span creativity, ergonomics, sustainability, human machine interaction, systems integration, medical devices, simulation, materials, manufacturing, robotics, augmented reality, sensors, analytics, and so on. The activities at CPDM is supported by latest equipment and state of the art laboratories including IISc Smart Factory that supported by highly experienced members of staff. They, along with students of CPDM have won coveted awards such as Best Paper Award (47th WWRF Meeting 2022), Lexus Design Award 2022, James Dyson Award 2021, and Abdul Kalam Technology Innovation National Fellowship 2021. Five of the faculty members of CPDM are enlisted among top 2% researchers in the world, according to Stanford University Study published in PLOS, 2021.



# Who are we?

## CPDM at IISc

The Centre for Product Design and Manufacturing (CPDM), the design and manufacturing face of IISc, is among the most research and technology intensive design and manufacturing schools in India, steeped in the ambience of the Indian Institute of Science (IISc), Bangalore.

CPDM is among very few schools in India that train students in developing and making systemically-complex, technologically-intensive, and socially-impactful solutions that are functional, aesthetic, usable and sustainable. It is among the top design schools in the world that specialise in development of hardware products and manufacturing systems, and has been among the best in research into design, ranking alongside design schools and research centres in Stanford, Delft, Cambridge and CMU. Based on the number of design researchers in top 2%, IISc is 8th in the world and 1st in Asia in Design Research.

“IISc Bengaluru is the **No. 1** ranking institute in India’s NIRF university and research rankings. It is also the global leader in the Citations per Faculty (CpF) index.”

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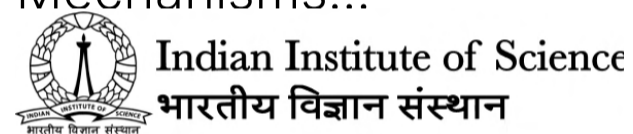
### **Amaresh Chakrabarti**

Design Synthesis and Creativity, Eco-Design and Sustainability, AI and Data Analytics, Product Informatics, Smart Manufacturing, Biomedical Devices, Sensors/Actuators



### **Dibakar Sen**

Geometric & Topological Modeling, Digital Human Modeling & Posturing, Geometric & Functional Vision Modeling, Natural Behaviour & Grasp Modeling, Kinematic Assembly Modeling, Deployable Antenna Mechanisms, Underactuated & Spring Actuated Mechanisms...



### **B. Gurumoorthy**

CAD, Product Informatics, Computational Metrology, Computer Aided Prototyping



### **Pradipta Biswas**

Human-Computer Interaction, User Modelling, Multimodal Interaction, Intelligent Interaction



# 03

# The Faculty.



### Anindya Deb

Vehicle Crashworthiness and Occupant Safety, Pedestrian Safety, Impact Modeling and Testing, Behavior of Lightweight Materials under Impact Loading, Design of Automotive Systems.



### Vishal Singh

Built Environment (BE) and construction management, Design and design management, Innovation and innovation management



### Abhijit Biswas

Core Engineering Area (Electronics and Instrumentation), Interdisciplinary Engineering Area, Basic Science Area (Physiology and Psychology)



### Manish Arora

Biomedical Devices, Co-Design, Collaboration and Open-Source in Design



### N.D. Shivkumar

Polymer based composites, Bio-Composites, Synthesis/Manufacturing of lightweight materials, Computer Aided Design & Analysis of lightweight materials, Optimization & DOE based studies, Design and Application of developed/Novel lightweight materials.



### Rina Maiti

Human Factors Engineering, Biomechanics, Product Design, Medical Engineering, Rehabilitation engineering...



### Abhra Roy Chaudhary

Robotics & Automation, Collaborative Mobile Robots (Aerial/Terrestrial/Marine), Human-Robot Collaboration, Mechatronics, Bioinspiration & Biomimetics

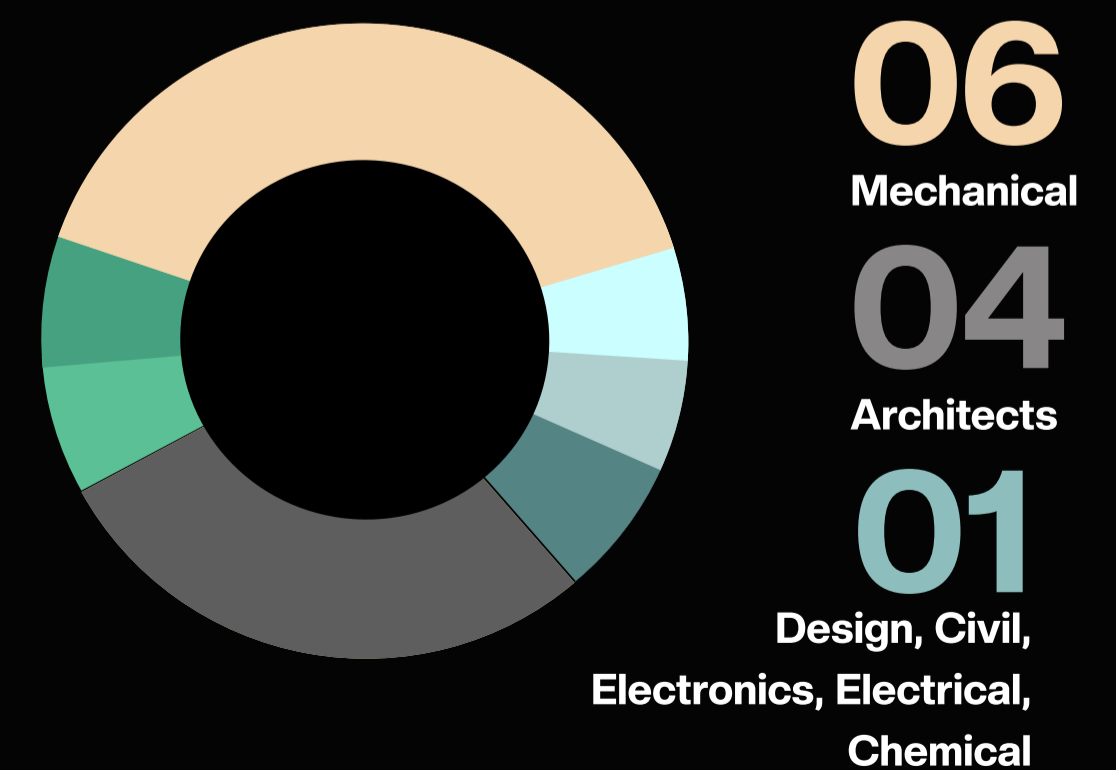


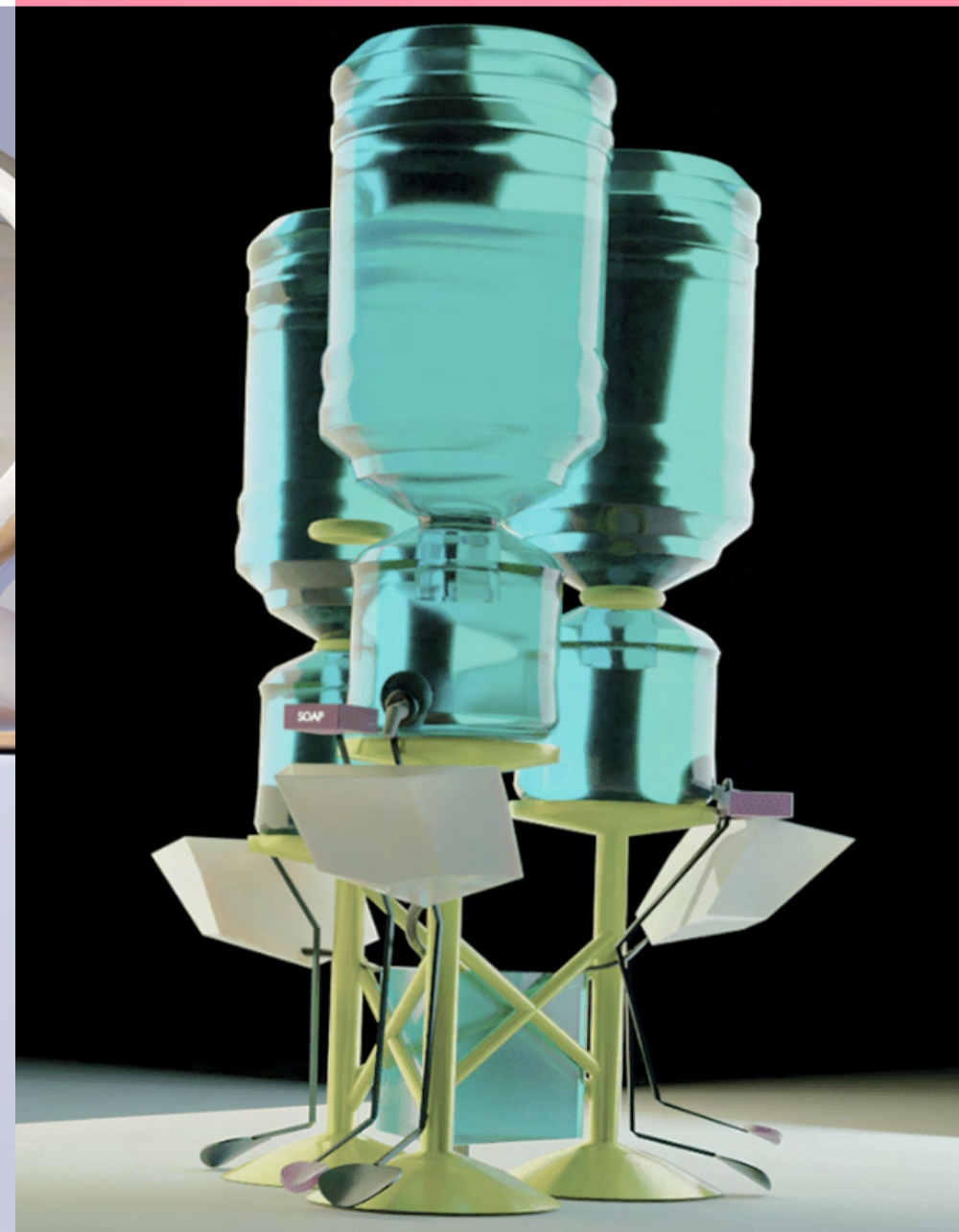
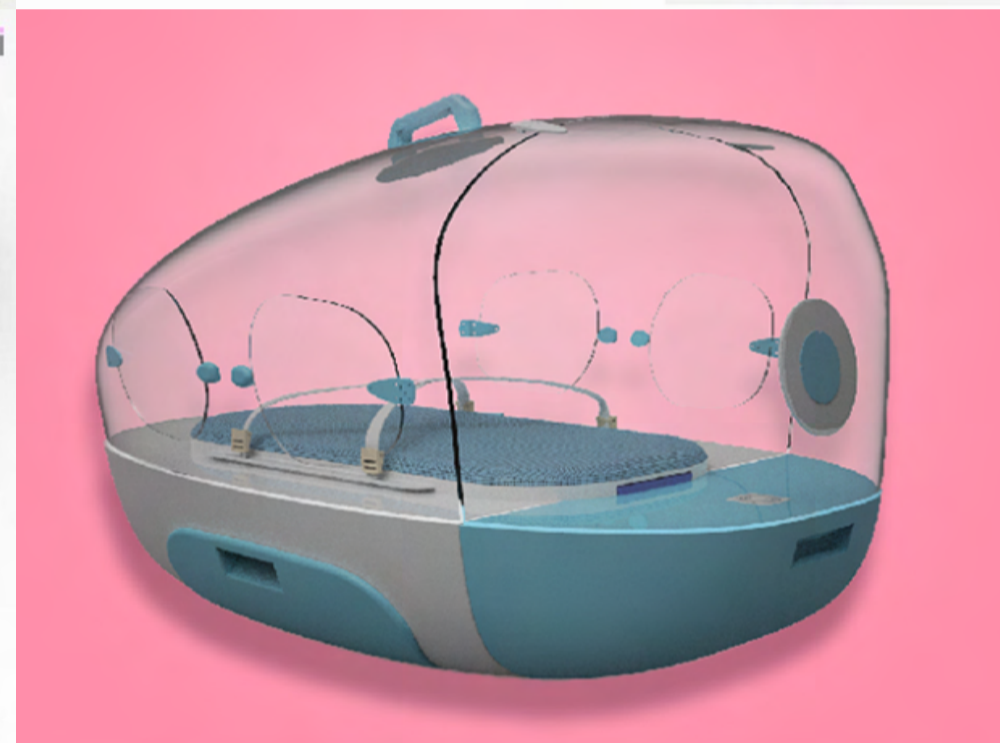
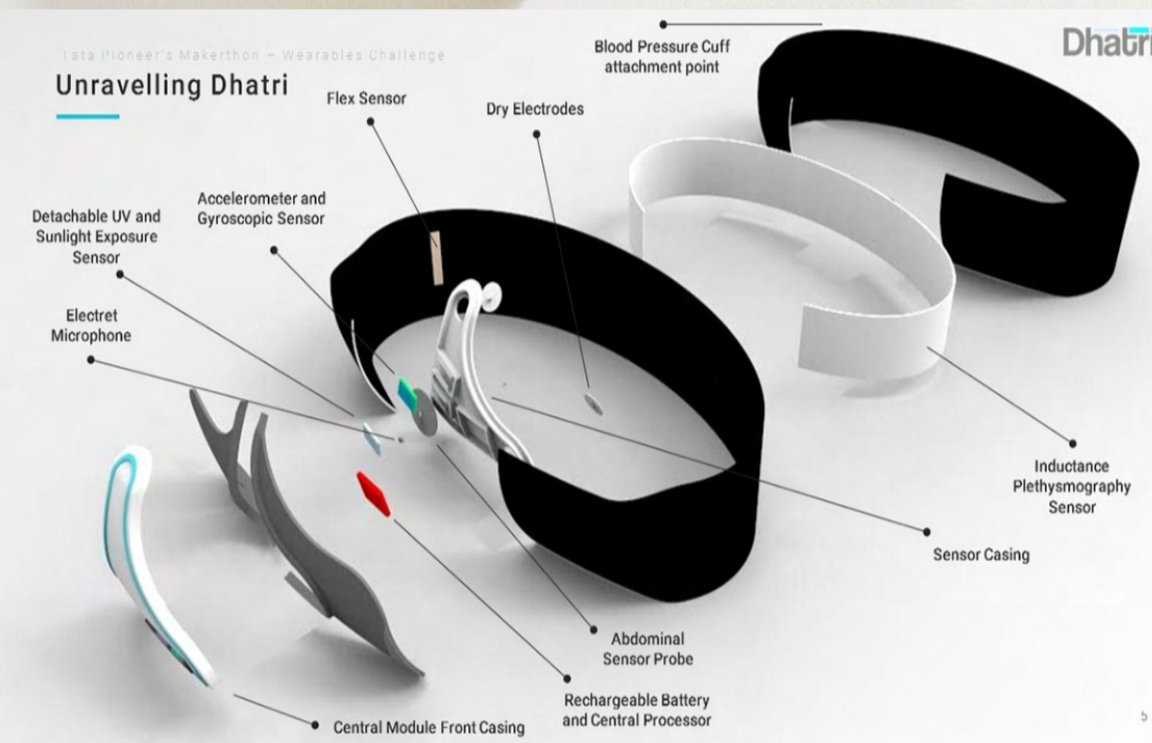


# Batch of 2022-24

The Batch of 2022-2024 is CPDM's Silver Jubilee Batch. It consists of 15 students from varied backgrounds of engineering and architecture.

## Demographics





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# Our Works.

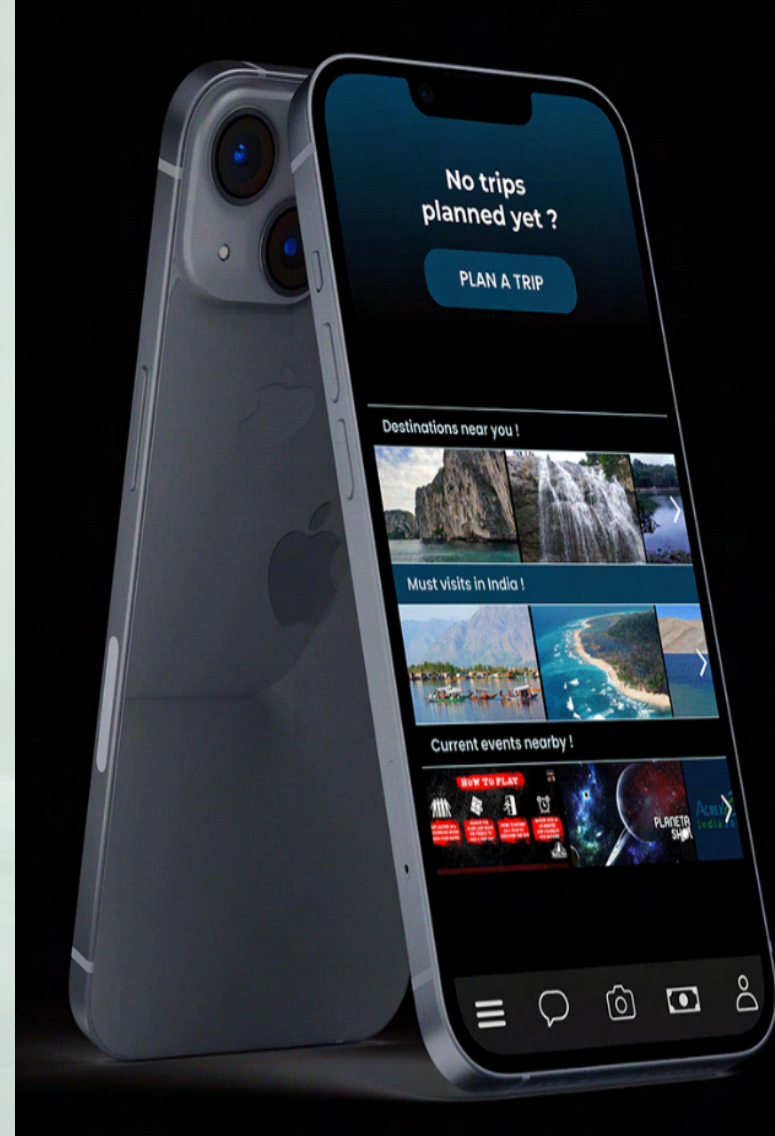
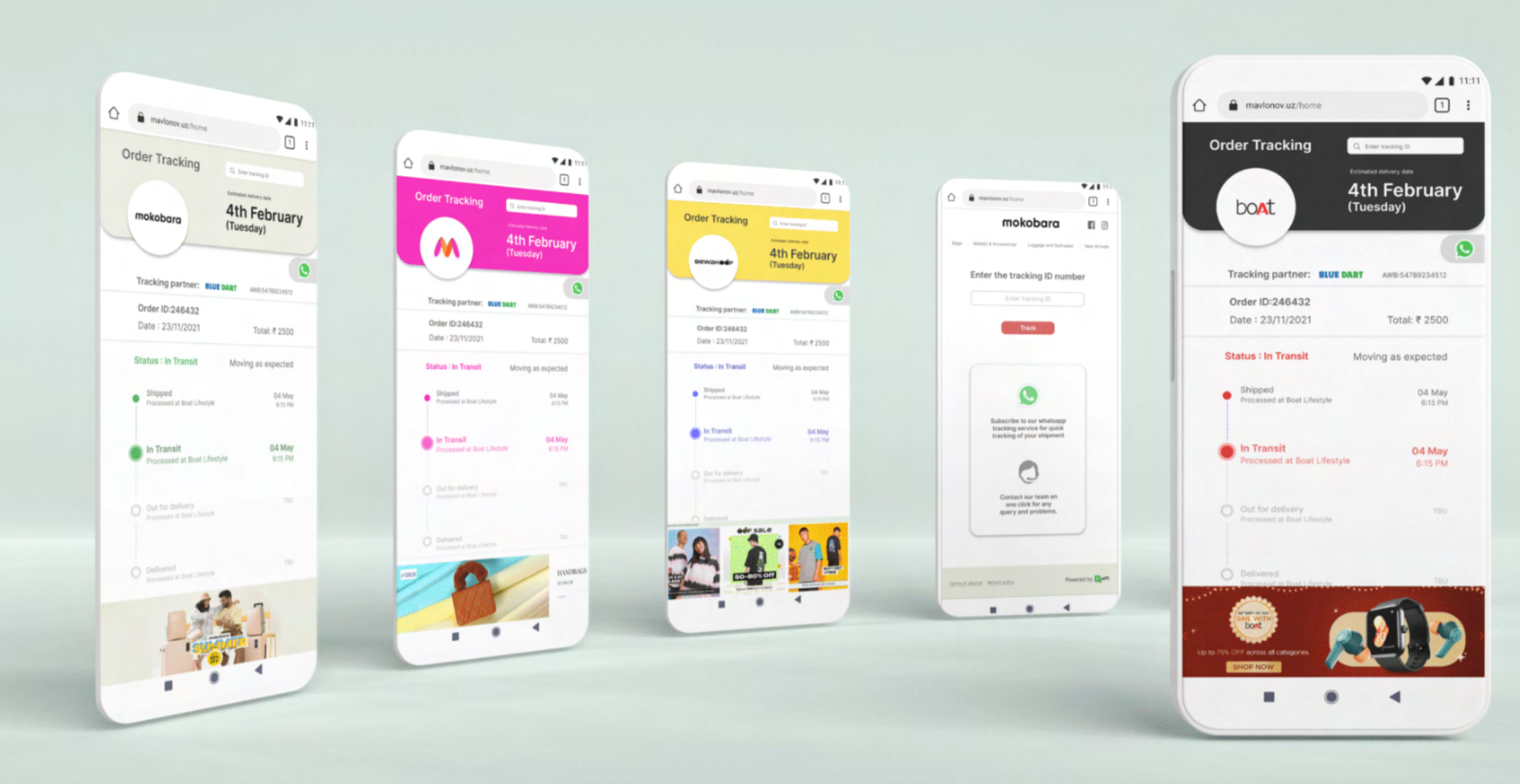
## 25 years of excellence in design

From acing in numerous national & international competitions to producing physical and digital products, CPDM has helped its students explore and navigate through different aspects of design which resulted in some of our best works.

# 07



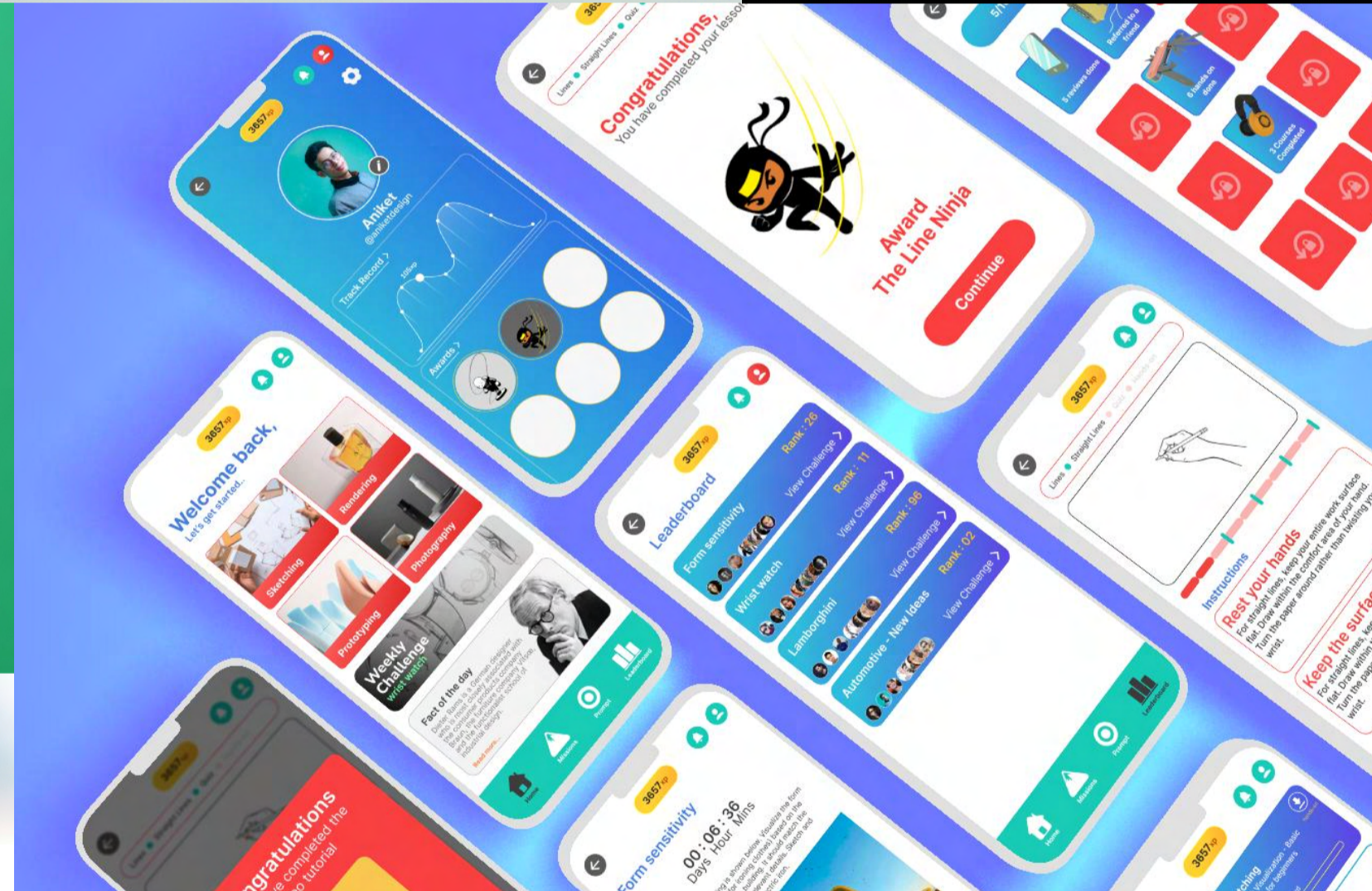
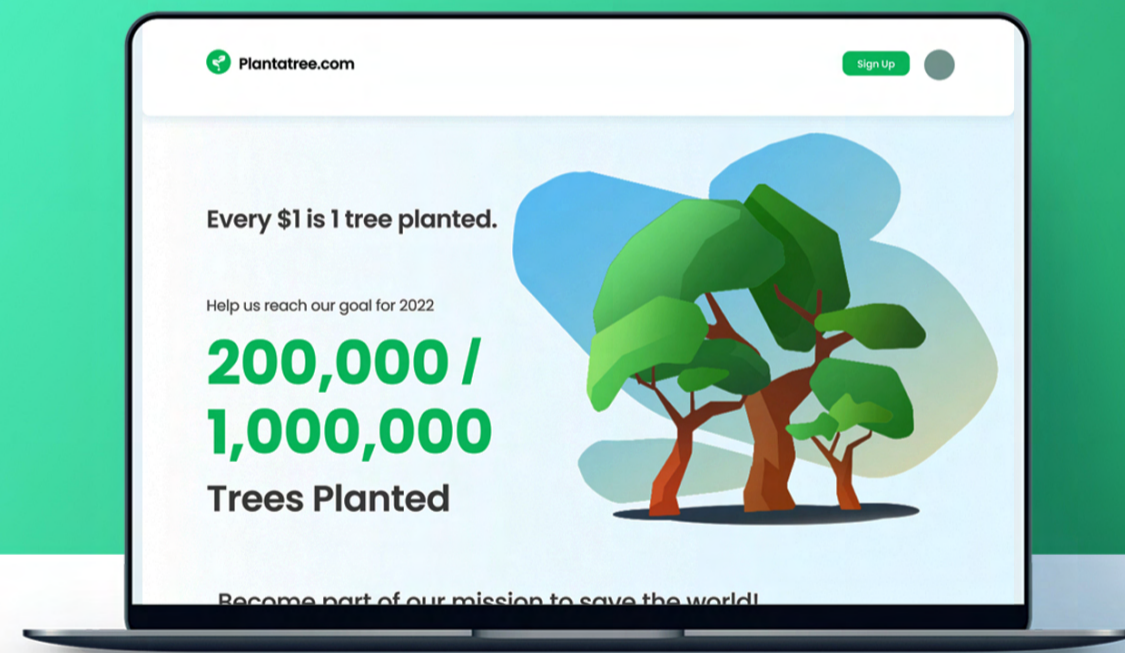
CPDM students have actively worked on various projects in diverse design fields, both on individual and group levels. The projects have varied from the redesign of products to the innovation of new ones. The highlights of our projects are extensive user research and high concept to patent conversion.



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Plantatree.com

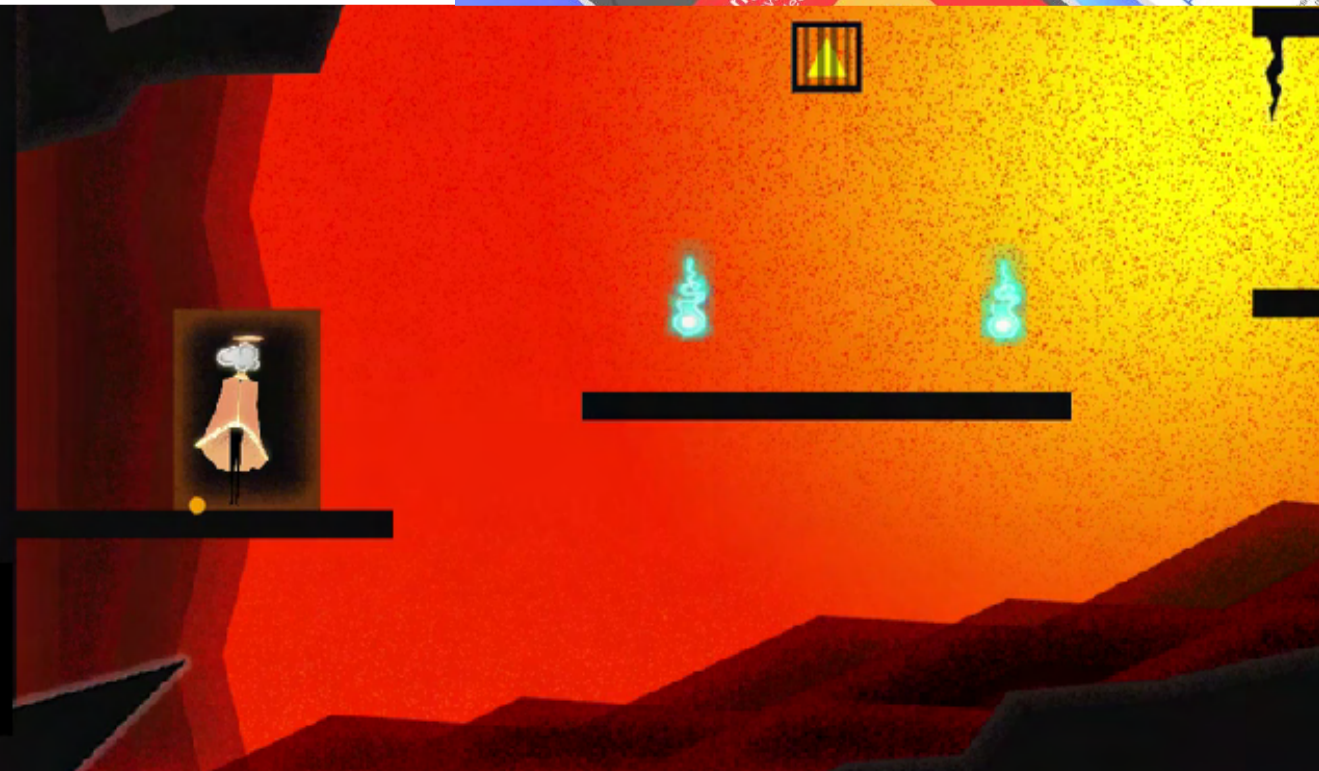
UX / UI Case Study



Unlock Movement



Collect Red, Blue and Yellow whisps to restore colour to Bhoom



CPDM students develop a solid foundation in design principles, which they can apply to various design fields. As a result, we are capable of producing a variety of digital products as well.

# Curriculum & Expertise.

Our M.Des curriculum in advanced design and engineering, spans the areas of Design Theory and Methodology, Product Lifecycle Management, Human Factors in Design, User Interface Design, Vehicle Design, Technology Integration, Sustainability etc., with major applications in Automotive, Aerospace and Biomedical sectors.

Our courses vary from Creative Engineering Design focusing on product design starting from habitat study to ideations using tools like TRIZ, Synectics etc; Embodiment Design, Mechatronics, Mechanism Design to teach prototyping the designs as physical products; courses like Human Computer Interaction and Robotics include the use of computation and AI; and New Product Development helps project designs to transcend as viable market products.

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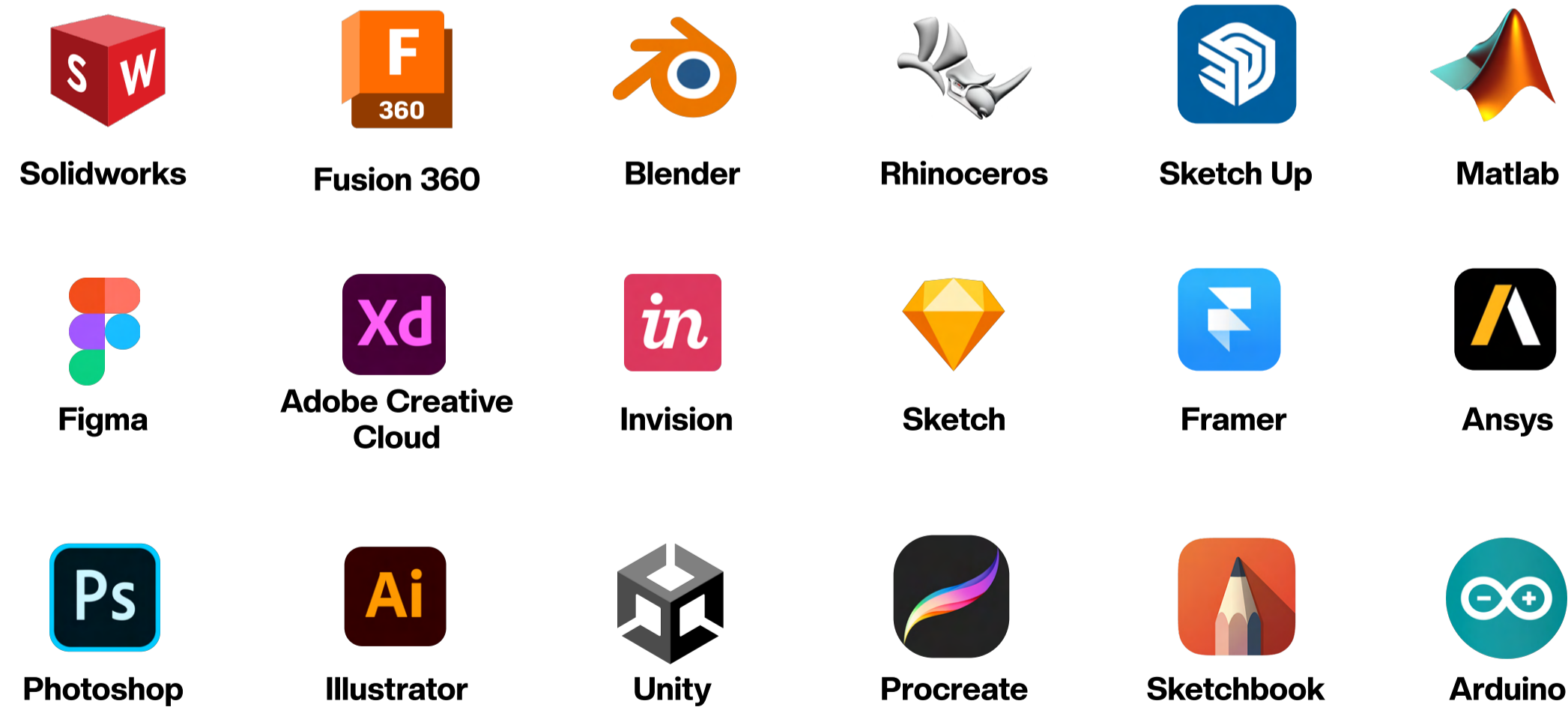
The diverse courses and projects help students build several skills, with our expertise lying in:

ERGONOMIC DESIGN  
PRODUCT DESIGN MANAGEMENT  
DESIGN ENGINEERING  
USER RESEARCH  
COMMUNICATION DESIGN  
INDUSTRIAL DESIGN  
PRODUCT VISUALIZATION  
MOBILITY & VEHICLE DESIGN  
UI/UX DESIGN  
INTERACTION DESIGN  
DESIGN RESEARCH  
PRODUCT PLANNING  
PROTOTYPING  
PRODUCT STRATEGY

NEW PRODUCT DEVELOPMENT  
**3D MODELING** USER RESEARCH  
 PRESENTATION SKILLS  
**PRODUCT SKETCHING**  
 VISUALISATION SKILLS  
**UX DESIGN** PROTOTYPING  
 CONFLICT RESOLUTION  
 ANALYTICS **TRIZ**  
 PITCHING SKILLS

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CPDM students are unique because we develop skills not only in design thinking and user research but also in analytical thinking, new product development and management, and ergonomic evaluation, giving us a good entrepreneurial edge. We are also experts in skills such as 3D modeling, sketching, presentation, and pitching. Moreover, our courses and projects are structured in such a way that students become proficient in using multiple software and tools used in designing, ranging from SolidWorks, Fusion 360, Blender for 3D modeling and rendering to Illustrator and Figma for graphic designing.



**Skillset.**

# Facilities.

## Research labs

<b>IDEAS Lab</b>	Innovation design study & sustainability
<b>UTSAAH Lab</b>	Universal technology solutions for accessible & affordable healthcare
<b>CAR Lab</b>	Creative automotive research
<b>HER Lab</b>	Human engineering research
<b>SCALE Lab</b>	Computerised anthropometry & ergonomics simulation
<b>I4I Lab</b>	Impact4Impact Lab
<b>RIMM Lab</b>	Research in Materials and Manufacturing

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# Facilities.

## Research labs

### **Su-Desi Lab**

Sustainability by design

### **PLM Lab**

Product lifecycle management

### **VR Lab**

Virtual Reality

### **I3D Lab**

Intelligent Inclusive Interactive design

### **RI Lab**

Robotics innovation

### **InSPIRE Lab**

Innovation synthesis and prototyping for interdisciplinary research and engineering



# Events & Awards

The students participate in numerous activities like talks and conferences by notable personalities. Organisations like UNICEF, TATA Elxsi and ISRO visit our labs for their projects. Regular workshops are conducted on prototyping, modeling, and building software skills. Our flagship events Ripples happen annually where the department showcases their project works and designs.

CPDM faculty in Global Top 2%  
The top 3 of the 5 high impact researchers enlisted from India in 'Design practice & Management' are from the core and associate faculty of CPDM, IISc Bangalore.



## ICoRD'23

9th International  
Conference on Research  
into Design

9-11 Jan'23 at IISc,  
Bangalore



## Silver Jubilee Celebrations

Monthly event celebrating

25 years of CPDM, started  
from 7 March 2022

## Workshops

**SmartX Health Hackathon**

**Brunel-IISc Seminar Series**

**Research Presentation Day**

**UI/UX Workshop**

**Toycathon**

**BARN (Benchmark Autonomous  
Robot Navigation) Challenge ICRA  
USA 2022**

**Reimagine Waste Hackathon**



## Ripples

Annual event  
showcasing the  
products and projects  
undertaken at CPDM

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## Awards

**Lexus Design Award 2022** | LifeBox by Deval Karia

**Abdul Kalam National Technology Innovation  
Fellowship 2021** | Prof. Dibakar Sen for PURAK

**James Dyson Design Award 2021 | National winner** |  
LifeBox is an active heart preservation container for  
extending out-of-body viable time during transport  
for transplant.

**Facebook Award** | Dr. Pradipta Biswas and Prof.  
Yogesh Simmhan for proposal on Privacy-  
respecting AR/VR to Enable Differently Abled in  
Multi-Cultural Societies.

**W2W IEEE Award 2021 | International winner** | Meraki,  
a device for the treatment of urinary incontinence in  
women, by Komal Shah

**ICCAS Conference 2020 Busan, S. Korea | Student  
best Paper Award Finalist** | Paper: Vision- based  
Object Sorting using Deep Learning for Inventory  
Tracking in Automated Warehouse Environment.

**MILCAA Award 2020**



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CPDM's M.Des program has harboured more than 100 students from all the country who have made their mark nationally and internationally in their respective fields since the first batch in 1997. Our alumni have been winning awards in various areas making CPDM proud. Here are some of the many notable alumni with their remarkable achievements.

# Notable Alumni

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# Alumni Footprint



PHILIPS

3M

SIEMENS



HCL



Mercedes-Benz



JOHN DEERE



BOSCH



Mahindra



Flipkart



SUZUKI



Infosys



McKinsey  
& Company



amazon



Honeywell



# Contact Us

Visit the following link to understand the IISc Recruitment Process through its placement cell body, the Office of Career Counselling and Placement (OCCaP)

<https://occap.iisc.ac.in/index.php/placement-procedure/>

For placement queries, write at  
**placement.occap@iisc.ac.in OR occap.iisc@gmail.com**

To participate in full time/internship, please share details in this Recruiter Registration Form

[https://docs.google.com/forms/d/e/1FAIpQLSffcXb7Kp0TknaeUS2JMD86NZVINLK3b8Bg\\_gueoRhECUgqUnA/viewform](https://docs.google.com/forms/d/e/1FAIpQLSffcXb7Kp0TknaeUS2JMD86NZVINLK3b8Bg_gueoRhECUgqUnA/viewform)

## Placement coordinator, IISc

**Ms. Jayanti Mahadevappa Belur**

Placement Officer

☎ 6362542567

✉ <https://occap.iisc.ac.in/>

## Faculty Coordinators



**Abhijith Biswas**

Assistant Professor, CPDM

✉ [abiswas@iisc.ac.in](mailto:abiswas@iisc.ac.in)



**Vishal Singh**

Associate Professor, CPDM

✉ [singhv@iisc.ac.in](mailto:singhv@iisc.ac.in)

## Student Coordinators



**Arun Lakra**

M.Des 2nd year, CPDM

☎ 9931391365

✉ [arunlakra@iisc.ac.in](mailto:arunlakra@iisc.ac.in)



**Sanika Bhide**

M.Des 2nd year, CPDM

☎ 9028132100

✉ [sanikabhide@iisc.ac.in](mailto:sanikabhide@iisc.ac.in)



**Anmol Luharuka**

M.Des 2nd year, CPDM

☎ 8287559688

✉ [anmoll@iisc.ac.in](mailto:anmoll@iisc.ac.in)



**Dibakar Paul**

M.Des 2nd year, CPDM

☎ 6000068348

✉ [dibakarpaul@iisc.ac.in](mailto:dibakarpaul@iisc.ac.in)