Teachers day celebration

I would like to thank all my Professors for guiding us in all the ways. We celebrated the teachers day on the remembrance of the birth date, [5 September 1888], of the second President of India, academic philosopher Dr. Sarvepalli Radhakrishnan, with full of enthusiasm and motivation. On that day the students were acting as professors and TE students conducted lectures for SE students under the guidance of Prof. S R Mane and Prof. Pavan Rayar, which was indeed a pleasureful moment.

Then we celebrated the function by organizing few fun games and few activities for the faculties of our department. Few mesmerizing moments which are in front of eyes now too are the singing of Ghazal from our beloved HOD Patel Sir, song sung by SE Mech Students, a folk song by Prof. S R Mane and then followed by the Cake cutting ceremony and so on.

Finally I would like to say that we were feeling happy and satisfied when Prof. Pavan Rayar mentioned in Vote of thanks as this programme was most disciplined, ethical and professional the department have ever witnessed. thanks and remembrance.

Pavan R

3D models on smart devices

In recent years, smart devices in the form of smartphones and smart pads have become widely available with the development of networks, the miniaturization of the Central Processing Unit (CPU), and the advancement of mobile technology. Smart devices are equipped with several built-in sensors, including cameras, and allow intuitive inputs via a capacitive touch screen. In addition, wireless networks are available through various paths, such as Wi-Fi, 3G, Long-Term Evolution (LTE) and Bluetooth. The lightweight and portable design makes smart devices ideal for use on the move. Technologies are being extensively developed with the advancement of smart devices. Due to the great convenience and diverse applications offered by these devices, many studies on the application of smart devices to various fields such as industry, defense, and education, are underway. Active investments are also expected as there are numerous opportunities to apply smart devices to industries.
In the field of CAD (Computer-Aided Design), there has been some effort to apply recent technology i.e., smart and ubiquitous technology. It is expected that mobile communications, ubiquitous sensing and computing technology, smart reasoning and agent-based computing, natural interaction techniques and other such technology will play a part in forming the paradigm of next-generation CAD/E systems and environments. Thus, various studies of CAD have been done in recent years. Research in the CAD field includes system architecture studies for human-centered CAD agent systems, new CAD interface studies using a brain–computer interface, studies that combine CAD and augmented reality environments, as well as the digital signal processing studies for networking and sensing.

There are many functions for 3D modeling, including modeling functions and manipulating functions. It is inefficient to implement every function onto smart devices because each commercial CAD system has slightly different types of functions and because the vast number of functions cannot all be accounted for. As such, we defined an essential subset for smart devices in a prior study. The neutral function set defined in the MPA research and is considered as the full set of modeling functions from which we chose some functions that were deemed necessary. A detailed explanation of the process for defining the subset is provided in the aforementioned previous study. The conditions for defining the subset are as follows:

1. if a shape created using a function can be created using another function, the two functions are integrated into a single function;
2. When integrating, the function with a higher frequency of use is chosen;
3. Functions that produce complex shapes and with a low frequency of use are excluded;
4. Functions that are not generally used as a reference to make another feature are excluded to reduce the level of complexity (e.g., Fillet).

Design Faster and Accurate

The old adage, “a picture speaks a thousand words” captures what user interface prototyping is all about: using visuals to describe thousands of words’ worth of design and development specifications that detail how a system should behave and look. In an iterative approach to user interface design, rapid prototyping is the process of quickly mocking up the future state of a system, be it a website or application, and
validating it with a broader team of users, stakeholders, developers and designers. Doing this rapidly and iteratively generates feedback early and often in the process, improving the final design and reducing the need for changes during development. Prototypes range from rough paper sketches to interactive simulations that look and function like the final product. The keys to successful rapid prototyping are revising quickly based on feedback and using the appropriate prototyping approach. Rapid prototyping helps teams experiment with multiple approaches and ideas, it facilitates discussion through visuals instead of words, it ensures that everyone shares a common understanding, and it reduces risk and avoids missed requirements, leading to a better design faster.

Rapid prototyping involves multiple iterations of a three-step process:

**Prototype**
Convert the users’ description of the solution into mock-ups, factoring in user experience standards and best practices.

**Review**
Share the prototype with users and evaluate whether it meets their needs and expectations.

**Refine**
Based on feedback, identify areas that need to be refined or further defined and clarified.

Few pictures of Rapid prototyping models are just given below.
Nanofluids

Nanofluids are a new class of fluids engineered by dispersing nanometer-sized materials (nanoparticles, nanofibers, nanotubes, nanowires, nanorods, nanosheet, or droplets) in base fluids. In other words, nanofluids are nanoscale colloidal suspensions containing condensed nanomaterials. They are two-phase systems with one phase (solid phase) in another (liquid phase). Nanofluids have been found to possess enhanced thermophysical properties such as thermal conductivity, thermal diffusivity, viscosity, and convective heat transfer coefficients compared to those of base fluids like oil or water. It has demonstrated great potential applications in many fields. For a two-phase system, there are some important issues we have to face. One of the most important issues is the stability of nanofluids, and it remains a big challenge to achieve desired stability of nanofluids. Here, I have tried to review the new progress in the methods for preparing stable nanofluids and summarize the stability mechanisms. In recent years, nanofluids have attracted more and more attention. The main driving force for nanofluids research lies in a wide range of applications. Although some review articles involving the progress of nanofluid investigation were published in the past several years most of the reviews are concerned of the experimental and theoretical studies of the thermophysical properties or the convective heat transfer of nanofluids. I have tried here to focuses on the new preparation methods and stability mechanisms, especially the new application trends for nanofluids in addition to the heat transfer properties of nanofluids. We will try to find some challenging issues that need to be solved for future research based on the review on these aspects of nanofluids.

Applications of nanofluid

Prof. Pralhad Pawar