



Robotics and automation

- 2001 -Some students grouped together to make a working model of a robot
- Aim to utilize the topics learnt in the college, to understand the availability of components, limits of technology, equipment
- Overall a group effort to bring in a change in society



Robotics and automation

- Need of platform for students to show their creativity, skills and knowledge of technical aspects
- Exhibitions, RONAST, UGC, corporate sponsors, mentors



Robotics and automation

- Why robotics?
- Industry- key to development and advancement of a nation
- Industry needs efficient machines, skilled manpower, visionary manager
- University- knowledge base for all the nation, solution to challenges that come in realising the technical challenges



Robotics and automation



- A control room to visualise a cement factory in Nepal



Robotics and automation



- An underground power house in Nepal

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Robotics and automation



- A garment factory in Nepal



Robotics and automation



- A small hydro electric plant in Nepal



- Robotics and automation

why robotics?

Accuracy, precision, high consistency, high throughput, mass production, lower price per unit.

Physical limits of human beings

robots – an extension of human capabilities

to cover search difficult/ remote terrain, deep sea exploration, hazardous situations, nano surgery,

human assistance , ...



Robotics And Automation

- Robotics?

- Mechanics

- Structures

- Electronics

- Programming

- Engineering

- Management

- A combination of all the engineering aspects





Robotics as a teamwork

- Team work – key to success
- Plan well in advance, divide and manage responsibilities
- Not a one man show like seen on the internet, who does all the machining , programming, all the works and even web hosting
- because they are veterans who were a part of a great team.
- Once a successful team- always a successful team. Experience always stays with the members, everyone turns out to be a good leader for a new team.



Robotics: problems?

- List is endless for a developing country like Nepal
- Resource, knowhow, money are universal constraints. They can be overcome
- Principal problem- lack of documentation and technology sharing/ transfer.



documentation

- Drawings/ plans
- Circuit diagrams/ pinouts
- Log of all the activities, materials, problems in hardware, software
- Decisions made on why something was accepted or discarded
- All The steps that led to a definitive solution
- Documentation- key to transfer of knowledge and process to new generation so that next generation does not “reinvent the wheel”



Robots through imagination

- A human like machine
- That does all the job 24 hrs a day, does not eat, sleep....





Robots through imagination

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Robots on duty



- A robot fits engine block



Robots on duty



- A robot extinguishing fire in a drill



Robots on duty



- A robot checks a HV transmission line



Robots on duty



- A robot surveys a drill setup



Robots on duty



- A robot assists in military drill



Robots on duty



- A robot ready for surgical treatment
- [..\robots.FP4F](#)



Back to Nepal- robocup



● ● ● | Robocup

- A venture by students for students
- Vision through mentors, teachers, participants





Robocup- making the most of what we have





Robocup- putting ideas into action





Robocup- a team work





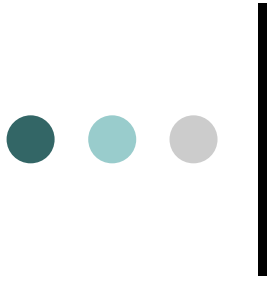
Robocup- a showcase of engineering talents



Robotics And Automation: innovation unlimited

- teamwork
- Understanding of the fundamentals science, maths and engineering
- Innovative ideas
- Persistence
- Documentation and presentation
- Time and resource management
- Back support- direction and assistance from teachers(academics) , experts.





All the best for the emerging engineers of the future

thank you