AKSHAY KUMAR

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OBJECTIVE

Seeking a research-oriented internship to implement my knowledge and skills with the opportunity to tackle challenges and contributing towards the growth of the organization I work for ,while expanding my library of expertise.

EDUCATION

Year	Qualification	University / Board	Aggregate% / GPA
2013-17	Bachelor in Technology (Electrical Engineering)	Malaviya National Institute Of Technology, Jaipur	8.29 / 10 (Up to VI semester)
2013	Higher Secondary Examination	Baldwin Academy , Patna – CBSE	93.0%
2011	Senior Secondary Examination	Christ Church High School, Patna – ICSE	93.8 %

RESEARCH PROJECTS

- **Efficient SEMG extraction from human body**
  - Optimized the extraction of electromyography signals from the human muscles
  - Developed a GUI for data logging and its analysis in real time

- **Exoskeleton**
  - Development of a robotic assistive technology to help cure osteoarthritis using SEMG signals is underway, software section completed
  - Ongoing – Work on deducing force-activation relationship using Machine Learning

PATENTS

- Robotic Technology for Transmission Line Inspection in Live Condition – **Published** (link)
- Rail Alert Systems- **Published** (link)
- Comprehensive System for Osteoarthritis detection, analysis and rehabilitation based on efficient SEMG signals - **Filed**

TRAINING & INTERNSHIPS

- **Industrial Automation Workshop** at MNIT Jaipur
- **Self-Driving Vehicle Prototype** - Ongoing Internship at **Swaayatt Robots, Bhopal, India**

HARDWARE PROJECTS

- **Robotic Technology for Transmission Line Inspection in Live Condition**
  - Built a comprehensive system to monitor various parameters of a power transmission line
  - System can traverse on live lines and relay data to a remote ground controller
  - Incorporated real-time animation of a 3D model and camera feed for better control
  - System exhibited at GRIDTECH'15 - by PGCIL Govt. Of India, won the 1st prize in the Student Innovation Pavilion Section.

- **RoboArm**
  - Built a robotic arm to replicate human hand and fingers' motions in real time.
  - Mounted on a terrestrial robot, the system can traverse on any terrain and has camera feed and wireless controlling.
  - The system can be used to give the actions of a human to a robot.

- **Unmanned Ground Vehicle**
  - Developed the control system for an unmanned ground vehicle(UGV) with differential drive
  - Simulated the same in MATLAB-Simulink to obtain control parameters and performance analysis

- **Geo-Fencing Around Unmanned Railway Track Crossovers To Avoid Accidents**
  - Developed a GPS-embedded systems powered location determining setup that sees if vehicles enter the geo-fence around any unmanned rail-road crossover.
  - Working on automatic braking system inside a geo-fence to prevent fatal crossover mishaps

- **Elbow Joint Actuation Assistive Device**
  - Developed a mechanical device to externally power the elbow joint
  - Incorporated a sensory mechanism to assist the control of the actuation

- **Robotics Projects**
  - Built line seeker, light follower, sound follower, DTMF controlled bot, obstacle avoider, Assembly line object counter, Lux-meter, Human Pulse Rate Counter, Theft Alarm and many other manual as well as autonomous robots.

- **Underground Water table analysis system**
  - Developed a system to determine groundwater level
  - It also could measure the other characteristics like pH value, temperature etc. of the ground water

SCHOLASTIC ACHIEVEMENTS

- **Finalists** at **Texas instruments India Analog Maker College Level Competition** 2015
- **Finished 4th** at the event **Circuit Mania, in Blitzschlag 2015**, MNIT Jaipur
- **Winner** Of **Cosmology & Physics Quiz** Contest 2014 at MNIT Jaipur.
- **Finalists** at the manual event Canyon Rush in **Kshitij 2014** held at IIT Kharagpur
- **Runners-Up** at **Tech Expo, Blitzschalg'14**, MNIT Jaipur
- Stood **3rd** in the school in CBSE Class 12th board examinations 2013
- School topper in the ICSE Class 10th Board examinations 2011

CO-CURRICULAR

- Senior Member of College's Robotics & Research Group **ZINE** (www.zine.co.in) at MNIT
- Organized Robotics workshop and conducted lectures and practicals on topics like Sensors, ICs & MCUs, Ethical Hacking, Processing & MATLAB, for the fresher batch of 2014 & 2015.
- Working as **Technical Secretary** for the **Electrical Engineering Society** in the college.

RELEVANT COURSES UNDERTAKEN

- Network Theory
- Control System Engineering
- Micro-processors
- Measuring Instruments
- Programming in C
- Electronic Devices & Circuits
- Digital Signal Processing
- Basics of Mechanical Engineering
- Digital Logic Circuits
- Robot Mechanics & Control, Part I & II - Online course at edx.org

FIELDS OF INTEREST

- Embedded Systems
- Robotics
- Simulation and 3D Designing
- Control Systems
- Computer Programming

TECHNICAL SKILLS

- **Languages** - C, Python ,Java , Assembly Language-8085/8086, HTML
- **Packages** - MATLAB, Solidworks, Diptrace, Proteus, Processing, Microsoft Office, Atmel Studio, MikroC, Simulink, TINA.
- **Operating Systems** - Windows, Linux, MAC OS X
- **Hardware** - Atmega Series Microcontrollers, Arduino, AVR, Raspberry Pi, Intel Galileo, Sensors

PERSONAL PROFILE

- **Date Of Birth** - 1st February 1995
- **Hobbies** - Following **Quora** & Reading Novels
- **Languages** - English, Hindi.

REFERENCE:

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