Nish Mohith Kurukuti - CV

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RESEARCH INTERESTS

Robotics, Design, Unmanned Aerial Vehicles, Humanoid Robots, Manipulators, Eye care Devices.

EDUCATION AND EXPERIENCE

Rajiv Gandhi University of Knowledge Technologies, R K Valley — September 2012 – Present
B.Tech, Mechanical Engineering (Major) — **CGPA: 8.36/10.0**

Robotics and Intelligent Systems Laboratory (RISL), IIT-KGP — May 2016 – July 2016
Summer Internship — Advisor: Prof. Cheruvu Siva Kumar

Rajiv Gandhi University of Knowledge Technologies, R K Valley — July 2010 – May 2012
Pre-University Course (Class XII) — **CGPA: 8.63/10.0**

Machani Somappa Eng. Medium High School, Yemmiganur (M), Kurnool (Dist.) — June 2009 – May 2010
Class X (SSC – AP State Board) — **Aggregate: 90.67%**

SUMMER INTERNSHIP

Robotics and Intelligent Systems Laboratory – Indian Institute of Technology, Kharagpur — May 2016 – July 2016
Designed and prototyped an anthropomorphic humanoid robot resembling 95% of 2 years old child. Developed Gait for walking and tested in simulation for the statically stable gait and stable biped walking.

FELLOWSHIP

LVP-MITRA Fellowship – Awarded by MIT Media Labs, Massachusetts — July 2016 – Jan 2017
Currently working on digitalising and converting the table top high end sophisticated eye screening devices to portable and user friendly devices at low cost for screening the people for eye diseases in rural areas

PUBLICATIONS

Nish Mohith Kurukuti, Mahesh Jinkala, Purushotham Tanjeri, Somasekhar Reddy Dantla and Mallikarjuna Korrapati, "**A Novel Design of Robotic System for Rescue in Bore well Accidents**", in IEEE Conference on Robotics and Automation for Humanitarian Applications (RAHA 2016), December 2016, India.

TRAINING

Advanced I.C Engines, Automotive Simulation Industry Internship
Organization: ExpertsHub Industry Skill Development Centre. — December 2013

- Observed and Studied I.C Engines by dismantling the engine of a Maruthi-800 and examined the parts in it. Studied various advanced technologies which came into existence since late 19th century to the latest used technologies in cars.

Summer Training cum Internship Program
Organization: Roboversity. — June 2014

- Learned and built seven different kinds of robots and programmed them to our desired needs. Learned how to use ARM platform and hardware-software interfacing.

PROJECTS

Open Indirect Ophthalmoscope
Robotics, Design, 3D Printing, Electronics — Srujana Centre for Innovation; August 2016 – Present

- Designed and Prototyped an Indirect Ophthalmoscope which is portable, cost effective and easy to screen
- This device is used to screen people with diabetic retinopathy.
- Being portable this device can be used for camps at rural area without having to hassle with bulky equipment.

Pupil+
Circuit Design, Robotics, Matlab — Srujana Centre for Innovation; October 2016 – Present

- Pupil+ is a device to screen for Relative Afferent Pupillary Defect.
- Developed circuit and designed for manufacturing.
- Made the device wireless using Bluetooth module HC-05 with the design
- Developed a GUI for Bluetooth interface of the device using Matlab.

Direct Ophthalmoscope
Design, 3D Printing — Srujana Centre for Innovation; October 2016 – Present

- Developing a design for a direct ophthalmoscope which can be used to take pictures and also able to see the live view of the patients eye.
- This gives the liberty for clicking pictures of the fundus of the eye and sharing the case study.
- Also this would change how students can learn in a class through display of live demo.

KYZR 4.0
Design, 3D Printing, Robotics — Robotics and Intelligent System Laboratory; May 2016 – July 2016

- Designed and developed an anthropomorphic humanoid robot which resembles a 2 year old child.
- Developed gait for stable bipedal walking.
- Validated the design and gait using simulation in Sim-Mechanics.

An Intuitive Path Programmable Robot
Robotics, Design, 3D Printing RGUKT, R.K.Valley; November 2015 – December 2016

- Designed and 3D printed a robot that can navigate through a grid by mapping and prioritising its path.
- Explored a dynamic way of programming the robot that travels in a grid by developing algorithms with which it can remember the traversed path and finds out the best path possible in a grid system with nodes.

ROBOT TO AID FOR RESCUE IN BOREWELL ENVIRONMENT (ROTARBE)
Robotics, Design, 3D Printing, Automation RGUKT, R.K.Valley; December 2015 – January 2016

- Designed and 3D printed a robot that can enlarge and contract to the required length and traverse into the bore-well.
- Developed a robot that can aid in rescue of victims in Bore-well Environment, with the help of robotic arms and aid in survival of the victim by providing oxygen and water.

Autonomous Under-Water Vehicle (UAV)
Robotics, Design, Automation, Oceanography RGUKT, R.K.Valley; December 2015 – January 2016

- Designed the chassis of the UAV and built it.
- Developed a wired Under-Water Vehicle and then advanced it to Autonomous Under-Water Vehicle. Explored a way to use sonar waves in localisation and mapping the path of UAV.

PRESS COVERAGE

IIIT students develop a robotic system to rescue children in bore-wells, **ABN-Andhrajyothi**. Jan 2016.
Students develop robotic system to help in the rescue of victims stuck inside bore-wells, **EENADU.** Jan 2016.

RELEVANT COURSES

Mechanical Engineering

Machine Drawing	Kinematics of Machinery	Mechanics of Solids
Thermodynamics	Dynamics of Machinery	Fluid Mechanics
Mechanics	Engineering Drawing and Graphics	Manufacturing Practices
Heat Transfer	Manufacturing Processes	Material Sciences
Applied Thermodynamics	Elementary Machine Design	

Electronic and Communication Engineering
Electrical Technology — Basic Electronics

Computer Science Engineering
Programming and Data Structures — Design of Algorithms

Mathematics
Transform Calculus — Partial Differential Equations

AWARDS

INTERNATIONAL COMPETITIONS

Winner – AUTOMATION and CITIZEN SCIENTIST track in Hackaday Competition
Finalist – Hackaday 2016 Prize

ACHIEVEMENTS

1st place for Science project named **Super Absorbent Polymer** in the sphere of **Agriculture and Food** at **Regional Science Fair** held at KV-1, Navsenabagh, Vizag. Got Shortlisted and Participated in **35th National Science Fair** held at **IIT- Kharagpur**.

Got applauded for making a robotic system that could help in the rescue of children stuck inside the borewells by the **Chief Minister of Andhra Pradesh Mr. Nara Chandrababu Naidu** in the project expo conducted at RGUKT, R.K. Valley. Also won the best project award in the event.

1st position in zonal round of Robotryst-2015, **National Robotics Championship**; selected for Grand Finale held at IIT-Delhi.

Completed **Tritiya Sopan** at KV-Tirupathi in **Scouts and Guides**.

1st prize for presentation of paper titled "**Human Computer Interactions**" at the event named **Technothon**, organised by Mechanical Department at RGUKT, R.K.Valley.

Got selected for **GYLC** (**Global Young Leader Conference**), held at three different countries (USA, China, Europe).

1st place in **Zonal Competition** for the game **Cha-pak-takra** held at Mantralayam, Kurnool (Dist) in Secondary School.

RELEVANT PROFECIENCIES

Programming Languages: C/C++, Python, ROS, Arduino
Software's: MATLAB, AUTO-CAD, Pro-E, CATIA, ANSYS, Solidworks, Eagle, Keyshot, Ray Optics
Hardware: Microcontrollers (Arduino, Atmega), Raspeberry-pi
Operation Systems: Windows, Linux/Unix, Mac

OUTREACH AND SERVICE

Campus Ambassador 2014- *Still Active*
Robospecies Technologies

Student Co-ordinator 2016- *Still Active*
Robotics Club, RGUKT, R.K.Valley.

Member 2015- *Still Active*
Robotics Club, RGUKT, R.K.Valley.

Technical Writer 2015- *Still Active*
PRISM, College Magazine.

Sponsorship Team Head, Organizing Member 2015-2016
VIPRASTHA, A Technical Fest at RGUKT, R.K.Valley.

Technical Student Volunteer 2012, 2014
Election Management, District Magistrate Chamber, Kadapa.

Organizing Member 2011-2012
Helping Hands Organization, RGUKT, R.K.Valley.

House Captain 2007-2008
Ashoka Team, Kendriya Vidyalaya, Anantapur.

REFEREES

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