

# Rohin K. Yeluripati

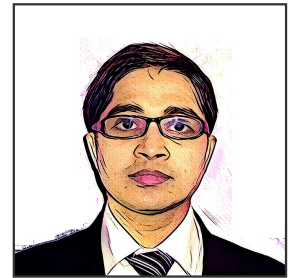
INVENTOR · TINKERER · RESEARCHER

B-36, Ganesh Colony, Pilani, Rajasthan-333031, India

☎ (+91)9818092877 | ✉ rohinkumar@outlook.com | 🌐 www.rohinkumar.strikingly.com | 📷 rohinkumar

| 📺 yrohinkumar | 🐦 @yrohinkumar | 📧 y.rohinkumar

*"What I cannot create, I do not understand. - R. Feynman"*



## Education

### Ph. D. in Cosmology

DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF DELHI

*Thesis Submitted*

*Feb, 2012 - Aug, 2018*

### Master of Engineering (M.E.), Micro Electronics

BITS-PILANI (BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE)

*Dropped out*

*Aug, 2009 - Feb, 2010*

### Master of Sciences (M. Sc (Hons.) Physics) with Bachelor of Engineering (B. E (Hons.) Electrical and Electronics Engineering)

BITS-PILANI (BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE)

*CGPA - 8.65/10*

*Aug, 2004 - July, 2009*

- Secured all "A" grades in M.Sc Physics with topping most of the courses.
- Received BITS Merit-cum-need Scholarship for maintaining good CGPA in academics throughout

## Research Experience

### Research Scholar

DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF DELHI

*Delhi*

*Feb, 2012 - Aug, 2018*

- Submitted thesis on "Studies in Alternative Cosmologies" for Ph.D. in Physics.
- Worked on Machine Learning Techniques to extract statistical parameters from SDSS sky survey
- Created small software packages and utilities (including **correlcalc**) in Python
- Studied alternative models of Cosmology and put observational constraints on them

### Project Research Assistant

PHYSICS BEYOND STANDARD MODEL, UGC PROJECT

*Delhi*

*July, 2011 - Feb, 2012*

- Helped setup computational facilities and work-flow for particle physics simulations

### Summer Research Fellow

DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF DELHI

*Delhi*

*May, 2011 - Sept, 2011*

- Worked on some aspects of Higher Dimensional Cosmology and simulated results

## Industry/Startup Experience

### Consulting Engineer, Hardware

IOIFY INC.

*New Delhi*

*Dec, 2016*

- Built and wrote firmware for Smart RO systems with IoT integration
- Calibrated TDS sensors for Water purity testing

### Founder-CEO, R & D Chief

MYTI TECHNETRONICS PVT. LTD.

*New Delhi/Pilani*

*Dec, 2012 - May, 2015*

- Worked on building an R & D company in design and electronics.
- Developed MyTi.Note tablet, Zappowr & did consulting for research projects.
- Did product design, component selection, prototyping, testing etc.
- Acquired various skills ranging from embedded systems design to final PCB design, technology research to firmware coding

## Intern, Tech R & D Group

Greater Noida, Uttar Pradesh

STMICROELECTRONICS

Jul, 2008 - Jun, 2009

- Developed a “High Speed Transceiver High Precision SILICON-CAD Validation Methodology Development” which is aimed at designing a new flow for signal integrity verification.
- Did a semi-custom design of an “All Digital Phase-Locked Loop” for digitally controlled clock generation using the standard cell libraries in CMOS090.
- Played an active role as a member of team consisted of 8 members in verification of a chip named Bolero in Automotive Product Group.

## Teaching Experience

### Guest Lecturer

New Delhi

SGTB KHALSA COLLEGE, UNIVERSITY OF DELHI

Aug, 2011 - Mar, 2013

- Taught Electromagnetic Theory, Signals & Systems, C++ Programming to B.Sc (Electronics) students.
- Conducted lab practicals along with guiding student projects.

### Guest Lecturer

Visakhapatnam, Andhra Pradesh

GITAM UNIVERSITY

Sept, 2010 - May, 2011

- Taught core courses to M.Sc (Electronics) and M.Sc (Physics) students along with projects.

### Tutor, College grade

Online

TUTORVISTA GLOBAL PVT LTD, PEARSON EDUCATION

Sep, 2010 - May, 2011

- Did online tutoring (teaching Physics) for college grade students.

### Teaching Assistant

Pilani, Rajasthan

BITS-PILANI

Aug, 2009 - Feb, 2010

- Helped in setting up Wireless Communications Lab.
- Worked as TA for Electronic Devices & Integrated Circuits, Digital Electronics & Microprocessor Programming and Measurement Techniques courses.

## Patents

2018	<b>An Electrically Controlled Thin Film Interference based Pixel and Natural Display</b> , Indian Patent no: 201811018427, Pending	Utility Patent
2018	<b>A battery-less Tire pressure monitoring system</b> , Indian Patent no: 201811018428, Pending	Utility Patent
2013	<b>Complimentary Pointing/Writing/Text Input Hybrid Device for Tablets &amp; Other Computing Devices</b> , Indian Patent no: 2109/DEL/2012, Expired	Utility Patent
2013	<b>Symmetrically Connected Tablet</b> , Indian Patent no: 251584, issued	Design Patent
2013	<b>Write and Type Hybrid Cover</b> , Indian Patent no: 251585, issued	Design Patent
2013	<b>3 patents of “Tablet with multipurpose cover”</b> , Indian Patent nos: 251684, 251685, 251686, issued	Design Patent

## Skills

<b>Programming</b>	C/C++, Python, Java, Javascript, HTML, Perl
<b>Software Packages</b>	Matlab, Mathematica, Maple, MS Office, ipython notebook, LaTeX, GNU Octave
<b>Hardware/Design</b>	Cadence Virtuoso, Cadsoft Eagle, DesignSpark PCB, ModelSim, Arduino, Embedded Programming, Verilog, VHDL, Sketchup
<b>Operating Systems</b>	Linux/Unix, MacOS, Windows, Solaris
<b>Languages</b>	English, Hindi, Telugu, Sanskrit

## Honors & Awards

2013-	<b>Mentor</b> , TechTop, MIT Media Lab India Initiative at Mumbai, Trivandrum, Cochin	Mumbai
2014-	<b>Fellow of the Startup Leadership Program</b> , Startup Leadership Program	Delhi
2013-	<b>Fellow of the Power of Youth</b> , Power of Youth, Metta Network	Delhi/Scotland
2014	<b>Interview Broadcast</b> , A special program on 'MyTi' and interview featured on NDTV	NDTV, India
2012	<b>Mentor</b> , Asian Physics Olympiad, 2012	Delhi
2012	<b>1st position</b> , AMITY B-Plan Competition	AMITY University
2012	<b>2nd Place</b> , Entrepreneurship Summit, Acumen, B-Plan Competition	NIT, Silchar
2006	<b>2nd Place</b> , Embedded Brains, APOGEE	BITS-Pilani
2004	<b>Pratibha Award</b> , Conferred by the Govt. of A.P for excellence in Intermediate Public Examination	Hyderabad, A.P
2004	<b>State 2nd topper</b> , Awarded by the Telugu Academy for excellence in board exams in Telugu Medium	Hyderabad, A.P

## Foreign Visits

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<b>Silicon Valley, USA</b>	2015 - Consulted for YouWeb (9Plus) Incubator for setting up a prototyping lab for IoT startups
<b>Shenzhen, China</b>	2014 - Visited tablet and mobile phone manufacturing facilities for MyTi and NuVo
<b>Trieste, Italy</b>	2013 - Attended conference on Planck satellite data on CMB observations at International center for Theoretical Physics (ICTP)

## Publications & Conference Proceedings

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### correlcalc: A 'Generic' Recipe for Calculation of Two-point Correlation function

Delhi University

ASTRONOMY & COMPUTING

Accepted for publication

- A Machine learning algorithm deployed to compute 2pCF quickly for any alternative model of Cosmology.

### Gravity Models for Linearly Coasting Cosmologies

Delhi University

ARXIV: 1611.03728

Pre-print

- Instead of assuming a form of gravity and demand cosmology fit with  $\Lambda$ CDM, a potentially 'viable'  $f(R)$  gravity model is derived assuming an alternative model of cosmology.

### Machine learning in Astronomy and Cosmology - An overview

DBIT campus

INTERNATIONAL CONFERENCE ON INNOVATIONS AND CHALLENGES IN SCIENCE AND TECHNOLOGY (ICICST-2018)

May, 2018

- A summary of applications of machine learning in astrophysics and cosmology

### Galaxy Clustering in Alternative models

Osmania Univ

ASTRONOMICAL SOCIETY OF INDIA (ASI)

Feb, 2018

- Observational galaxy clustering and its dependence on fiducial cosmological model.

### Yukawa type corrections to Newtonian potential and its implications at different scales

IUCAA, Pune

YOUNG ASTRONOMER MEET (YAM)

Sept, 2017

- A contributed talk presented on the effect of Yukawa-type potential corrections in galaxy rotation curves observations

### A New Class of Cosmologically 'Viable' $f(R)$ Models

IIT-Guwahati

INDIAN ASSOCIATION FOR GENERAL RELATIVITY AND GRAVITATION (IAGRG) NAMED "THE ERA OF GRAVITATIONAL WAVES"

May, 2017

- A Poster presented on alternative gravity models that are cosmologically viable

### GSM based Intelligent Instrumentation

BITS-Pilani

NATIONAL CONFERENCE ON VIRTUAL AND INTELLIGENT INSTRUMENTATION

Nov, 2009

- This paper discusses a GSM model to control remotely placed instruments using Short Messaging Service (SMS).

## Extracurricular Activities

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2013-14	<b>Panel member on TV Debates</b> , Participated in a couple of debates on NDTV representing BITS-Pilani at the request of their PR team	Delhi
2006-08	<b>Astronomy Club Secretary</b> , Conducted Sky-watch sessions and workshops on Amateur Astronomy and Telescope making	BITS-Pilani
2004-06	<b>Organizing Committee Member, SPIC-MACAY</b> , Organized various cultural events as part of society for the promotion of Indian classical music and culture amongst youth	BITS-Pilani
2004-06	<b>Core Member, Dept. of Trophy Fabrication</b> , Actively participated in designing trophies and mementos for various events at the institute	BITS-Pilani

## Hobbies

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- Amateur Astronomy, Reading, sketching and playing badminton
- Singing and appreciating Indian classical music and playing Veena, Harmonium