Rohin K. Yeluripati
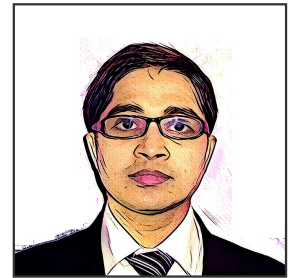
INVENTOR · TINKERER · RESEARCHER

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

Education

Ph. D. in Cosmology   *Thesis Submitted*

DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF DELHI   *Feb, 2012 - Aug, 2018*

Master of Engineering (M.E.), Micro Electronics   *Dropped out*

BITS-PILANI (BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE)   *Aug, 2009 - Feb, 2010*

Master of Sciences (M. Sc (Hons.) Physics) with Bachelor of Engineering (B. E (Hons.) Electrical and Electronics Engineering)   *CGPA - 8.65/10*

BITS-PILANI (BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE)   *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   *Delhi*

DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF 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   *Delhi*

PHYSICS BEYOND STANDARD MODEL, UGC PROJECT   *July, 2011 - Feb, 2012*

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

Summer Research Fellow   *Delhi*

DEPARTMENT OF PHYSICS & ASTROPHYSICS, UNIVERSITY OF DELHI   *May, 2011 - Sept, 2011*

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

Industry/Startup Experience

Consulting Engineer, Hardware   *New Delhi*

IOTFY INC.   *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   *New Delhi/Pilani*

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

Skills

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

Honors & Awards

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

Foreign Visits

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

Publications & Conference Proceedings

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

ASTRONOMY & COMPUTING
Final acceptance awaited

- 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 ΛCDM, 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

2013-14 **Panel member on TV Debates**, Participated in a couple of debates on NDTV representing BITS-Pilani at the request of their PR team
Delhi

2006-08 **Astronomy Club Secretary**, Conducted Sky-watch sessions and workshops on Amatuer Astronomy and Telescope making
BITS-Pilani

2004-06 **Organizing Committee Member, SPIC-MACAY**, Organized various cultural events as part of society for the promotion of Indian classical music and culture amongst youth
BITS-Pilani

2004-06 **Core Member, Dept. of Trophy Fabrication**, Actively participated in designing trophies and mementos for various events at the institute
BITS-Pilani

Hobbies

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