

Kumar AYUSH

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Seeking learning opportunity for May-July 2016

Awards and Achievements

- Jul 2013 **Silver Medal** at International Olympiad on Astronomy & Astrophysics, Greece
- Oct 2012 **Silver Medal** at International Astronomy Olympiad, Korea
- 2013 Recipient of **Kishore Vaigyanik Protsahan Yojana Scholarship** awarded by the Govt. of India to motivate students interested in research
- 2014 Awarded **All Rounder Trophy** at School Farewell for overall excellence
- 2012–2013 Felicitated twice with the **Infosys Award** for Olympiad Medalists
- 2012–2014 **Olympiad Orientation–Cum–Selection Camp – Astronomy.**
 - Awarded the Best Answer to a Challenging Data Analysis Question in 2012
 - Awarded the Best Observer in 2013
 - Awarded the Best Answer to a Challenging Theoretical Question in 2014
- 2010 Holder of **NTSE Scholarship** awarded by NCERT, Govt. of India

Research Experience

- Winter 2013 **An X-Ray Study of Black Hole Candidate X Norma X-1,**
NIUS – Astronomy, Prof. Manojendu Choudhury, CEBS – UM.
 - Analyzed timing information from RXTE to detect quasi-periodic oscillations
 - Fitted obtained spectra & observed unusual oscillations in the inner radius
- Winter 2012 **Estimation of Photometric Redshifts Using ML Techniques,**
NIUS – Astronomy, Prof. Ninan Sajeeth Philip, IUCAA, Pune.
 - Estimated red shifts based on SDSS color data using artificial neural networks
 - Compared the performance of neural network against other ML techniques

Leadership & Organizational Experience

- Summer 2015 **Indian National Astronomy Olympiad Program 2015,**
Resource Person for the selection of the Indian teams to IAO and IOAA.
 - Student facilitator for mentoring and evaluating students
 - Generated and evaluated questions for the selection procedure
 - IOAA Team India got best result in 9 years, topped the medal tally and won team competition
- Spring 2015 **IPhO–Rum, 46th IPhO,**
International Physics Olympiad 2015, Mumbai, India.
 - Created a first of its kind browser application to be used during academic meetings with functionalities such as file management, voting & feedback
 - Worked in the academic logistics team during the Olympiad helping with a variety of proceedings
- 2015-16 **Convener, Web n Coding Club,** IIT Bombay

Web & Coding Experience

- Fall **AviPulse**,
2014 *A non-profit initiative to build the world's first bird identification system.*
○ Implement a developed sound processing algorithm to identify the bird species
○ Create a web tool which takes the bird voice as the input
- 2014–2015 **Gruppo Leopardo Inc**,
www.gruppoleopardo.com / www.grandimagazzinibomboniere.it.
○ Designed & maintained e-commerce websites for the company based in Italy
- Spring **PNR Predictor**,
2015 *An app as a part of a hackathon, code.fun.do, Microsoft.*
○ Built an app which predicts probability of ticket confirmation based on an statistical model
○ Runner up at institute level and participated in Finalists' Forum
- Fall **Video Attendance**,
2014 *Face Detection using Hidden Markov Models and Discrete Cosine Transforms*,
Prof. D.B. Phatak, IIT, Bombay.
○ Programmed detection of faces in a video capture for marking the attendance of the student
○ Learnt about hidden Markov Models and implemented a prototype based on DCT

Miscellaneous Projects

- Fall **Kelvin Water Drop**, Maths n' Physics Club, IIT, Bombay.
2014 ○ Built a working model of the Kelvin Water Drop experiment
○ Demonstrated before an audience followed by a discussion on concepts involved
- 2013 **Science Fun**, Delhi Public School, Jodhpur.
○ Designed and demonstrated a magic show based on everyday science, highlighting the simple science that lies behind the most mysterious phenomena.

Computer skills

- Basic MATLAB, Photoshop, Illustrator, C#
Intermediate L^AT_EX, OpenOffice, Linux, Microsoft Windows, OpenCV
Advanced Python, C/C++, HTML, JavaScript, PHP

Courses Undertaken

- CSE** Introduction to Programming, Networks
Physics Electricity and Magnetism, Quantum Physics and Applications, Classical Mechanics, Non Linear Dynamics, Special Theory of Relativity
Maths Calculus, Linear Algebra, Ordinary Differential Equations, Complex Analysis

Languages

- English **Near Native** *excellent command*
German **Basic** *learning*

Interests

- Music
- Cooking
- Travel
- Reading