Amandeep Singh

August 7th, 1996
sardarji4169@gmail.com
+353 899486340

Education

M.Sc. - Data Analytics:
National College of Ireland, Dublin, Ireland | 2020-2021

M.Sc. - Astrophysics & Cosmology:
University of Zurich, Zurich, Switzerland | 2019 | 4.5/6 (ECTS)

B.Sc.(Hons.) Physics:
S.G.T.B Khalsa College, University of Delhi, Delhi, India | 2017 | 77.64%

Class XII:
K.V. Tagore Garden, New Delhi, India | 2014 | 92.6%

Class X:
K.V. Kathmandu, Kathmandu, Nepal | 2012 | CGPA: 9.8/10

Skills

Languages: C++, Python, R, HTML, CSS.

Other: LaTeX, MySQL, SPSS, PowerBI, Tableau, PHD2, Mathematica, Git, Nebulosity, Adobe Lightroom, GNU plotter, QUCS, ABINIT, Powerpoint, Excel.

Extra-Curricular

Music
– Passed (two-years) Junior Diploma Examination in Harmonium (Vocal) from Prayag Sangeet Samiti, Allahabad (Uttar Pradesh, India); &
– Can play Tabla as well.

Regularly participated in various co-curricular activities during school and college

Research Experience

Jul'18 — Research Project - Astro-Particle Physics — ETH Zurich
Title: *Monitoring the properties of the atmosphere relevant for the observation of cosmic rays and cosmic gamma rays with atmospheric Cherenkov telescopes* | The data collected by FACT (an ETH operated telescope) was analysed, and then a method was proposed to monitor the properties of the atmosphere by using the telescope itself by looking at the structure of the arrival-times of single photons on the nanosecond level. | The code was developed on a small observational data-set that was increased to 3-5GB afterwards.| The report can be found on `https://goo.gl/sazMAB`

Jul'19 — Masters' Project — Institute of Computational Science, UZH
Title: *A sub-grid model for molecular gas in a cosmological galaxy formation simulation* | The molecular fraction of H_2 & CO & line luminosity of CO in galaxies was studied. For this aim, a sub-grid model was constructed which used micro-turbulence, a log-normal probability distribution function, Jeans length & a simplified model for radiative transfer. This sub-grid model was then used to post-process a cosmological zoom-in simulation. The results were compared to observations taken of similar galaxies, and conclusions were drawn.| The model was applied on simulation snapshots (15-50GB), and was post-processed on a supercomputer cluster at ICS UZH.

Awards/Achievements

Apr'18 — GRE Physics Test
Scored 830 in the GRE-Physics conducted by ETS in Zurich, Switzerland.

Jun'19 — IELTS
Overall Score - 7.5 | Listening - 9.0 ; Reading - 7.5 ; Writing - 6.0 ; Speaking - 8.0

'04-'14 — Science
Participated in National Science Olympiad (NSO-SOF) in 2004 (School Rank (SR)-4), 2005 (SR-4), 2009 (SR-6), 2010 (SR-1 and qualified for next level), 2011 (SR-2) besides NTESE in 2007, 2008, 2009 and 2014.

'08-'11 — Maths
Participated in International Maths Olympiad (IMO-SOF) in 2008 (SR-3), 2009 (SR-7), 2010 (SR-10) and 2011 (SR-8).

'11 — Cyber
Participated in National Cyber Olympiad (NCO-SOF) in 2011 (SR-3).

'12-'14 — English
Participated in International English Olympiad (IEO-SOF) in 2012 (SR-1, International Rank-3915) and 2014 (SR-1, International Rank-1000).

Seminars/Conferences Attended

Mar'16 — Quantum Mechanics : Theory & Applications
Attended two-day workshop jointly organised by DDU College, University of Delhi; NASI, Delhi Chapter and IEEE EDS, Delhi Chapter.

Oct'16 — Quantum Physics & Quantum Optics
Attended two-day workshop jointly organised by Dyal Singh College, University of Delhi and NASI, Delhi Chapter.

'17-'19 — UZH Seminars
Regularly attended various seminars organised at UZH by the Institute of Computational Science.