Piyush Ahuja

CONTACT INFORMATION

Department of Mathematics

Indian Institute of Technology Delhi

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EDUCATION

Oxford University   **Oxford, United Kingdom**
BA in Philosophy, Politics and Economics (PPE)   Starting October 2014
Recipient of Second Undergaduate Degree Scholarship Award   Harris Manchester College

Indian Institute of Technology Delhi   **New Delhi, India**
Five-Year Integrated MTech in Mathematics and Computing   2008 – 2013
CGPA: 9.21/10 (2011–13)   8.07/10 (2008 –13)
Mrs. Chander Kanta Nanda Excellence Award   Convocation '13
Master's Thesis: "Approximation Algorithms in Network Design"

RESEARCH INTERESTS

Algorithmic Game Theory, Network Design, Mechanism Design, Behavioral Economics, Philosophy of Mind, Philosophy of Mathematics

SCHOLASTIC ATTAINMENTS

All India Rank 708 and 99.77 percentile (among 311,258 candidates) in IIT JEE 2008

All India Rank 643 and 99.93 percentile (among 862,853 candidates) in AIEEE 2008

Graduate Record Examination GRE Score: 333/340

Scholar's Badge, St. Johns High School Chandigarh

RESEARCH EXPERIENCE

Approximation Algorithms in Network Design   **Masters Project, IIT Delhi**
Supervisors: Professor Naveen Garg and Professor Amitabha Tripathi   July 2012 - July 2013

Devised a new primal dual algorithm for Single-Sink Rent-or-Buy problem. Proved lower bound of 3 on performance guarantee of 4.55- algorithm by Swamy and Kumar

Internet Economics and Network Congestion Pricing   **NUS, Singapore**
Supervisors: Professor Richard Ma   May 2012 - July 2012

Modeled the Internet network congestion as a competitive equilibrium in a stochastic process. Conceptualized Congestion Options, instruments analogous to stock options in financial markets

Economics and Rationality   **Dept. of Humanities**
Supervisors: Professor Rukmini Bhaya Nair   July 2012 - Current

Hypothesized that (1) Altruistic instinct leads to violations of transitivity and independence, and (2) Psychological value of money depends on ownership. Devised experiments to test these.

Combinatorial Algorithms for A-D Market Equillibria   **Dept. of Computer Science**
Supervisor: Professor Naveen Garg   January 2012 - May 2012

Attempted to solve the open question of designing an efficient combinatorial algorithm for the A-D market equillibrium problem, and gained further structural insights about the solutions space.

Stochastic Modelling in Healthcare Services   **AIIMS, New Delhi, India**
Supervisor: Professor Nomesh Bolia   October 2011 - December 2011

Collected and filtered data for afternoon shift (6 hours) in emergency department over 4 weeks. Modeled the workflow as a stochastic process. Facilitated the evaluation of impact of various staffing levels on service efficiency (patient throughput and patient waiting time)

PUBLICATIONS

P. Ahuja and S.Kundu, "Redimensioning of Euclidean Spaces". *Preprint: http://arxiv.org/abs/1307.7010*

P. Ahuja, "Man and Machine: Questions of Risk, Trust and Accountability in Todays AI". *Preprint: http://arxiv.org/abs/1307.7127*

PAPERS IN PREPARATION

P.Ahuja, "The Congestion Option"

ESSAYS AND ARTICLES (UNPUBLISHED)

P. Ahuja, "Essays in Economics and Morality"

P. Ahuja, "Game Theory and The Dark Knight" (Published in Maths Department Magazine)

P. Ahuja, S. Chohan and S. Chouhan, "Role of Science and Technology in Chinas Healthcare Sector"

P. Ahuja, "Capturing Information Flow through Hilbert Spaces"

P. Ahuja, "The Theory of Conditional Expectation"

P. Ahuja and H.Deo, "Yields Falshehood When Preceded by its Own Quotation"

P. Ahuja and S.Shrivastava, "Whats in a name?: An Essay in Philosophy of Language"

TALKS AND PRESENTATIONS (AT IIT DELHI)

Passing The Baton. *Workshop for nurturing and mentoring new quizzers (2012)*

Yields falsehood when preceded by its own quotation. In *Mind, Machine and Language (2011)*

Othello and Omkara: Reading Shakespeare in Modern Times. In *Introduction to Drama (2011)*

Art and Humanity. In *Contemporary Fiction (2010)*

INDUSTRIAL EXPERIENCE

Opera Solutions LLC   **Noida, India**
Analytics Specialist, Global Markets   August 2013 - Present

Working on Mobiuss - a risk, valuation and analytic platform, using advanced statistical tools methods to generate data-driven market insights and help clients make better decisions, from trading MBS to managing whole loan portfolios.

Deloitte Consulting US - India Ltd.   **Mumbai, India**
Summer Intern in Information Management Practice   May 2011 - July 2011

Created a data warehouse prototype for Deloittes Communication Excellence program in a team of five. Offered a full-time position based on the work.

LANGUAGES

Python, SQL, LaTeX, HTML, CSS

Leadership Experience	**Secretary, Representative and Panel Member, Quizzing Club, IIT Delhi** 2009 - 2012

Led a team of 11 to organize 30 events, including all major events in Indias quizzing calendar:
- World Quizzing Championships 10, held simultaneously across 70 cities in 30 countries
- National Level Sweden-India Nobel Quiz 2010, in collaboration with Embassy of Sweden
- Mahaquizzer and Megawhats: biggest open quizzes in India, held simultaneously in 14 cities

Organized 8 Inter-College events at Rendezvous 2010, with 100+ teams participating in each event
- Collaborated and secured sponsorship deal from IMS
- Arranged for Indian football star Sunil Chhetri to open the Sports Quiz

*Awarded **Runners-up Trophy, Best Club**, 2010-2011*

Overall Coordinator, Reliance Ramanujan Mathematics Quiz   Jul 2012 - Dec 2012
An Inter-School quiz contest celebrating the birth anniversary of Srinivas Ramanujan

Recruited and led a team of five to set up and manage logistics, promotions and web development
Assisted Srinjoy Chowdhuri, anchor and senior editor, Times Now for content development & hosting
Successfully collaborated with Reliance Foundation, with over 300 teams participating from 100+ schools from the NCR region

Quizmaster and Crossword Setter for Literary Events:

Word Games 2013, Annual Institute-Level Crossword and Word Puzzles Event

Sphinx, Rendezvous 2011, Inter-College Quiz at IIT Delhi

Sports Quiz 2010, Rendezvous 2010, Inter-College Quiz at IIT Delhi

Esoterica, Science and Technology Quiz at Tryst 2010, IIT Delhi

Institute-Level Quizzes: Lone Wolf 2013, Jeopardy 2012, Movie Quiz 2012 and Quizzathlon 2011

Panel Member, Film Screening Committee. Formulated Club Policies for the year 2011-12. Effected a collaboration with Taj Enlighten Film Society

Coordinator, Tryst 2010. Led a team of two activity heads in successfully conducting an event at annual technical festival

Community Work	**Teach for India (Jafana English Medium School, Govandi)** June 2011

Instituted a library and resource centre in a low-income school in Mumbai

National Service Scheme   2008-10

Taught children in campus under N.G.O Vidya. Devoted 100 hours to service under NSS

Initiatives	**Quizzing Arena**

Quizzing Arena delivers quizzing as a service to clients for alternative learning, brand building and people management. Co- founded with an LBS alum, it has generated profits worth 3.5 lakhs within an year of inception.

Sahayata
Sahayata is a social venture that helps the unemployed poor find work as domestic help in urban households. It is still in the survey and planning stage.

QUIZZING
ACHIEVEMENTS

Finished in the top three in 52 quizzes at various levels in the last 5 years, including:

National Level

Winner, Four Episodes, Season 1 & 2, NDTV *Tech Grandmasters. Reached Top 4 all over India*
Second Runners-up, One episode, DD Sports *Sports ke Superstar. Finished 3/10 in the episode*

Inter College Level

Winner:

Literature Quiz, Literati, IIT Delhi	2011
Sports Quiz, Sportech, IIT Delhi	2011
Movie Quiz, St.Stephens College	2010
SciTech Quiz, Delhi Technological University	2010
General Quiz, Zakir Hussain College	2010
General Quiz, Hindu College	2009

Runners-up:

General Quiz, Lady Sriram College for Women	2012
Mathematics Quiz, Kamala Nehru College	2012
General Quiz, Department of Management Studies, IIT Delhi	2011
Jigyasa General Quiz, Jesus and Mary College	2010

Second Runners-up:

General Quiz , Gargi College	2012
Zoom-In, Rendezvous, IIT Delhi	2011
Literature and Arts Quiz, Delhi Technological University	2011
General Quiz, Ramjas College	2011
Sports Quiz, Sri Venkateswara College	2011
General Quiz, Montage, Jesus and Mary College	2011
Lit, Ent and Arts Quiz, Zakir Hussain College	2010
Sphinx, Rendezvous, IIT Delhi	2009

Institute Level

Winner, 10 Quizzes. Mastermind 2012, Lone Wolf 2011, Quizzathlon 2012, 2011 and 2010, Variety Quiz 2011 and 2009, Jeopardy 2013 and 2010

Led hostel to Quizzing Club's **Winner's Trophy** (2012) and **Runners-up Trophy** (2009, 2010, 2011, 2013) in the annual league of 11 hostels

LITERARY
ACHIEVEMENTS

Winner, Cryptic Crossword, Inter-College competition at Rendezvous, IIT Delhi	2011
Winner, Word Games, Inter-College word puzzles competition at Literati, IIT Delhi	2011
Winner, E-Labyrinth, National Level online treasure hunt at Literati, IIT Delhi	2010
Winner, Three Muses, Institute Level competition on literature and cryptic word games	2010

SPORTING ACHIEVEMENTS	*Silver Medal*, Inter-Hostel Football League, IIT Delhi	2010-11
	Silver Medal, Inter-Hostel Football League, IIT Delhi	2008-09

HONORS AND AWARDS

Mrs. Chander Kanta Nanda Excellence Award 2013
Awarded at Convocation '13 for demonstrating excellence in academics and cultural activities amongst all graduating students of undergraduate and dual degree programmes

Cumulative Outstanding Contribution to BRCA 2013
Awarded to the best all-round cultural and creative contribution at IIT Delhi

Cumulative Outstanding Contribution to Quizzing Club 2012
Awarded to the best cumulative contribution to Quizzing Club

Outstanding Contribution to Film Series Committee 2012
Awarded to two students for outstanding contribution to Film Series Committee

Gem of the House 2012
Awarded to the best outgoing all-rounder in the hostel

Significant Contribution to Cultural Activities 2011
Awarded to the best contribution to cultural activities amongst the third year in the hostel

Best Representative, Quizzing Club 2010
Awarded to 1 out of 11 representatives of the Quizzing Club at IIT Delhi

Referees

Professor Naveen Garg	**Professor Rukmini Bhaya Nair**
Department of Computer Science	Department of Humanities
Indian Institute of Technology Delhi	Indian Institute of Technology Delhi
Hauz Khas, New Delhi 110016, India	Hauz Khas, New Delhi 110016, India
Professor Subiman Kundu	**Professor Anima Nagar**
Department of Mathematics	Department of Mathematics
Indian Institute of Technology Delhi	Indian Institute of Technology Delhi
Hauz Khas, New Delhi 110016, India	Hauz Khas, New Delhi 110016, India
Professor Richa Kumar	**Professor Demetrius Pavolgyi**
Department of Humanities	Department of Computer Science
Indian Institute of Technology Delhi	Eotvos Lorand University
Hauz Khas, New Delhi 110016, India	Budapest, Hungary