Nishit Asnani

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Educational Qualifications

Year	Qualification	Institute	Performance
2014-present	B.Tech., Computer Science and Engineering	Indian Institute of Technology Kanpur	9.6 / 10.0
2012-2014	XII (CBSE)	Campion School, Bhopal	97.2 / 100
2000-2012	X (CBSE)	Campion School, Bhopal	10.0 / 10.0

Academic Achievements

- Secured **All India Rank 161** in **JEE Advanced** 2014 among 150,000 students.
- Secured **All India Rank 172** in **JEE Main** 2014 among 1.4 million candidates.
- Awarded **Academic Excellence** Award by IITK, 2014-15.
- Awarded **KVPY fellowship** in 2013 after securing **AIR 18** (out of a total of about 40,000 students).
- Secured **A*** grade for outstanding performance in **Data Structures and Algorithms**, Physics-2 and Intro to Biology.
- Scored **800/800** in each of Physics, Chemistry and Mathematics-2 in **SAT Subject Tests** (October 2013).
- Scored 800/800 in Mathematics, 690/800 in Critical Reading, 670/800 in Writing in **SAT Reasoning Test** (June 2013).
- Cleared Regional Mathematical Olympiad (**RMO**), Zonal Informatics Olympiad (**ZIO**), National Standard Examination in Physics (**NSEP**), National Standard Examination in Junior Science (**NSEJS**) conducted by IAPT.

Projects Undertaken

- **Unsupervised Learning for Document Embeddings** *Prof. Manindra Agrawal, IITK NYC Office May 2016 - ongoing*
  - Developed an online model with **TensorFlow** that uses a **Deep Belief** Network to learn low dimensional document embeddings.
  - Pretraining of the model is done using stacked **Restricted Boltzmann Machines**, and fine-tuning is accomplished using an **autoencoder**-decoder with bottleneck layer as the embeddings. Achieved accuracies of over 70% on the 20 Newsgroups dataset.
  - Built an **Akka** actor on Scala that receives documents, posts them on a topic at a Kafka server, and a **Kafka consumer** that subscribes to that topic and sends the documents to the online model for learning the embeddings.

- **Clustering for Email Forensics** *Prof. Nasir Memon, NYU, Research Track Exploration (RTE)*   *May 2016 - ongoing*
  - Designing a **clustering** algorithm for email that could produce structured output quickly on a keyword search by an investigator.
  - Developed a model for the same that clusters emails based on the **names and locations** of the senders.

- **Development of a Chatbot** *Summer Project, Programming Club, IIT Kanpur*   *May - June 2015*
  - Used the **Natural Language Toolkit(NLTK)** to design and implement three distinct algorithms to find the closest response to a given input: one relied on semantic similarity of words using **WordNet**, another on pattern matching and a third on exact word matching based on the frequency of words in the NLTK corpora to assess their value.
  - Designed a visual app for the same. Database was handled via SQL.

Technical Skills

- **Programming:** C, **C++, Python**, Octave, LaTeX, Verilog, Assembly, Shell scripting, SQL, Git, *Beginner*: C#, Java, PHP, Scala, CSS, HTML
- **Software/Libraries:** Natural Language Toolkit, TensorFlow, GNUplot, MS Azure, scikit-learn, Akka, Apache Kafka
- **Machine Learning:** Generative models, CNN, RNN, skip-gram, online learning, Deep Autoencoders, PCA, k-means

Relevant Coursework

Data Structures and Algorithms	Computer Organization	Machine Learning Techniques*	Operating Systems*
Discrete Mathematics	Abstract Algebra	Design and Analysis of Algorithms*	Logic
Probability and Statistics	Linear Algebra & ODE	Computing Laboratory 1 & 2	Theory of Computation*

* - Ongoing

International Exposure

- Attended **Computing Camp** at the National University of Singapore (**NUS**), Singapore in December, 2011 along with students of five other nationalities, with scholarship from Science Olympiad Foundation.
- Secured A- in **MG204: Leadership in Organizations** at the **London School of Economics Summer School**, 2016.
  - Expanded my skills to diagnose complex organizational problems and make decisions in the face of limited information and multiple stakeholders.

Extra Curricular Activities and Positions of Responsibility

- **Authored three mystery novels**, one of which was published, by the name of Death in the Dead Sea.
- **Coordinator**, English Literary Society: Responsible for conducting literary events with a team of 16 secretaries. (2016-)
- Executive, Corporate Relations and Startup Internship Program, Entrepreneurship Cell (2015-16)
- **Academic Mentor** of Mathematics 1 and Mathematics 2, and **Student Guide**, Counselling Service (2015-16)
- Core Group Member, Vox Populi, Campus Journalism Body (2015-)