SHANTANU AGARWAL

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EDUCATION

BTech, Mathematics and Computing   *CPI 9.22*
Indian Institute of Technology, Guwahati   *July 2013 - June 2017*
Minor in Product Design

EXPERIENCE

Research Assistant, *Indian Institute of Technology Delhi*   *Mar 2020 – Present*
- Crowdsourced data using Amazon MTurk for a novel dialog dataset
- Implemented multiple models, like MemN2N and finetuned GPT2, for establishing baselines for the dataset
- Working a novel end-to-end Task Oriented Dialog System to solve the problem proposed with the dataset

Associate, Equities Strategist, *Goldman Sachs, Bangalore*   *Jun 2017 – Feb 2020*
As a quantitative strategist in Prime Services business, I took up roles in the below domains
- Liquidity Management - Built reporting tools for a real-time view of all trades to understand cash impact, manage firm's cash reserves, and reduce volatility buffers
- Lockup Projections - Built real-time projections of lockup under client protection rules of 15c3-3 and PAB
- Inventory Management - Built strategies for optimized movement of assets across different clearing locations and funding facilities to satisfy client requirements per rules of each market
- Funding - Calculated business funding requirements given positions of different tenures, taking into account multiple risk scenarios and regulatory requirements imposed on the firm

Software Engineer Intern, *Samsung R&D Institute, Bangalore*   *May 2016 – Jul 2016*
- Designed a tool to analyze and report user transactions in Samsung mobile payments app
- Researched competitive apps across different platforms and built a working demo

Machine Learning Engineer Intern, *iLenze, Bangalore*   *May 2015 – Jul 2015*
- Implemented object detection in raw images using deep learning library Caffe and region proposal generation; achieved 87% accuracy in object detection
- Developed enhancements for Caffe, introducing C++ interfaces
- Implemented image retrieval for high dimension non-sparse vectors using product quantization and achieved 90% accuracy with 100ms retrieval time in a set of 60K vectors of 4096 dimension

KEY COURSES

Computer Science: Data Structures and Algorithms, Operating Systems, Networks, Databases
Statistics: Statistical Methods and Time Series Analysis, Advanced Statistical Algorithms
Mathematics: Probability Theory, Optimization, Discrete Maths, Scientific Computing, Stochastic Calculus
Design: Product Design, Ergonomics, Product Planning and Strategy, Design Management
MOOCs: Machine Learning, Deep Learning Specialization

PROJECTS

Procedural Content Generation Via Machine Learning, *Prof. Matthew Guzdial*   *Sept 2020 - Ongoing*
Generating levels of tile-based games like Super Mario Bros by modeling each stage as a text sequence. We plan to use the latest text sequence models and a unique dataset mined from Super Mario Maker

Deep Convolutional Generative Adversarial Networks, *Self Project*   *June 2020*
Implemented and trained the deep convolutional generative adversarial network on celebA dataset from scratch

Parallel Bipartite Matching, *Prof. Kalpesh Kapoor*   *August 2016 - May 2017*
Implemented a parallel algorithm for bipartite graph matching using OpenMP in C++

ACHIEVEMENTS

- Graduated with 4th rank in my batch of Mathematics and Computing program at IIT Guwahati
- Secured a position among the top 1% of the 150K candidates who appeared for Joint Entrance Examination
- Was offered Branch Upgrade after the first year of undergraduate studies for excellent academic performance
- Secured an All India Rank of 1362 in National Level Science Talent Search Examination - 2012 with a subject-wise rank of 17 in physics and 288 in mathematics

EXTRA CURRICULAR

Dance: Won Best Dancer award in *Manthan*'17 and led teams to top positions in 2 national (*Electric Heels*'14 and '16, *RGI*'16)and victory in 2 inter-hostel (*Footloose*'16 and'17) group dance competitions at IIT Guwahati
Fine Arts: Created *VizShizz*, an art shop to raise awareness for social causes and collect funds for donation
Social Work: Volunteered for *Udaan* - an initiative to help underprivileged children. Helped with the renovation of a school for underprivileged children as a volunteer in Goldman Sachs' *Community TeamWorks*'19