

# SHANTANU AGARWAL

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## EDUCATION

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BTech, Mathematics and Computing

CPI 9.22

Indian Institute of Technology, Guwahati

July 2013 - June 2017

Minor in Product Design

High School, CBSE Board

94.4%

Maheshwari Public School, Jaipur

July 2011 - March 2013

## EXPERIENCE

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Equities Strategist, Associate

June 2017 - Present

Goldman Sachs Services Pvt. Ltd.

Bangalore, India

As a quantitative strategist in Prime Services business, I have taken up roles in below domains

- **Liquidity Management** - Built infrastructure and reporting tools for a real-time view of all trades which helps understand cash impact, manage firm's cash reserves and reduce volatility buffers. Brought down buffers for US entity by \$1.2bn and targeting another \$1bn for Europe entity.
- **Lockup Projections** - Enhanced the performance of real-time projections of lockup under client protection rules of 15c3-3 and built a similar report for PAB lockup.
- **Inventory Management** - Built smart strategies for optimized movement of assets across different clearing locations and funding facilities to satisfy client requirements per rules of each market and still provide profit opportunities. Thousands of borrows/loans are booked every day managing \$270bn borrows itself.
- **Funding** - Worked on identifying funding requirements of the business given long and short positions of different tenures taking into account multiple risk scenarios and regulatory requirements imposed on the firm, and optimizing between all the funding facilities available to the firm.

Software Engineer, Intern

May 2016 - July 2016

Samsung R&D Institute

Bangalore, India

- Designed a tool to analyse and report user transactions in Samsung mobile payments app
- Researched competitive apps across different platforms and built a working demo

Machine Learning Engineer, Intern

May 2015 - July 2015

iLenze Pvt. Ltd.

Bangalore, India

- 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 quantisation and achieved 90% accuracy with 100ms retrieval time in a set of 60K vectors of 4096 dimension

## KEY COURSES

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**Computer Science:** Data Structures and Algorithms, Operating Systems, Networks, Databases, ML (Coursera)

**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

## ACHIEVEMENTS

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- 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 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

## PROJECTS

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Parallel Bipartite Matching August 2016 - May 2017  
Bachelors Thesis Project IIT Guwahati

**Prof. Kalpesh Kapoor, Project Guide**

Implemented a parallel algorithm for bipartite graph matching using OpenMP in C++.

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Statistical Analysis of Financial Data August 2016 - Nov 2016  
Course Project IIT Guwahati

**Prof. Arabin K. Dey, Project Guide**

Implemented parameter estimation of distributions for exchange rates and spot returns using maximum likelihood estimate, Bayes estimate and bootstrap.

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Database for Cricket Scorecards January 2016-April 2016  
Course Project IIT Guwahati

**Prof. Amit Awekar, Project Guide**

Designed and implemented a database system for recording scorecards of cricket matches using MySQL.

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Client-Server Socket Programming April 2016  
Course Project IIT Guwahati

**Prof. Venkatesh T., Project Guide**

Built a relay based peer-to-peer system using client-server socket programming in C.

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Search Engine February 2016  
Course Project IIT Guwahati

**Prof. Gautam K. Das, Project Guide**

Developed a search engine using C++ to query a directory using trie and hashing. Also built a file comparison engine based on cosine similarity of word vectors to output top most similar files for a given query file.

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## RESPONSIBILITIES

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- Internship Secretary, Center For Career Development, IIT Guwahati, 2015 - 2016
- Core Team Member, AlcherCreatives, Alcheringa, 2014 - 2017

## EXTRA CURRICULAR

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### Dance

- Received Best Dancer award in Manthan'2017, IIT Guwahati's inter-hostel cultural festival
- Bagged 2nd Position in Electric Heels (2014 and 2016) and won RGI(2016), both were inter-college dance competitions
- Led hostel team to victory in Footloose (2016 and 2017), Inter-hostel group dance competition

### Fine Arts

Won 2nd position in State Level Painting competition organized by Indian Post in 2011.

### Theater

Won 2nd Position in Mime competition in Manthan'2014, inter-hostel cultural festival

### Social Work

- Volunteered for 'Udaan', an initiative to help underprivileged children
- Participated in community building activity by helping with the renovation of a school for underprivileged children as a volunteer in Goldman Sachs' Community TeamWorks'19