Deepak Kumar Gouda

🌐 deepakgouda.com   ✉ deepakgouda1729@gmail.com   ⌨ deepakgouda   **in** deepakgouda

Education

Bachelor of Technology	**Indian Institute of Technology, Guwahati**
*Mathematics and Computing, GPA **8.80/10.0***	*July 2020*
Higher Secondary	**CHSE, Odisha State**
*Mathematics and Science, **88%**, **99.89** percentile*	*May 2016*

Publications

○ **Design and Validation of BlockEval, A Blockchain Simulator**

Deepak Kumar Gouda, Shashwat Jolly & Kalpesh Kapoor

- Accepted for oral presentation at *COMSNETS 2021*
- Developed simulation framework to generate network level data of large Blockchain topologies
- Proposed a validation pipeline to evaluate the correctness of synthetic data; simulated data of *Blockeval* was compared against actual Bitcoin network information to prove its accuracy

○ **Construction of Confidence Intervals for a Univariate Stock Price Signal predicted through Long Short Term Memory Network**

Shankhajyoti De, Arabin Kumar Dey & Deepak Kumar Gouda

- Published in *Annals of Data Science 2020, Volume 7(3)*
- Proposed a novel way to construct Bootstrap confidence intervals of signals predicted by LSTM models; this method was used to predict stock price movements with high accuracy
- Developed a penalty function based on L_2 distance of mean series between original and bootstrap samples to calculate the optimal optimal block length while bootstrapping

Experience

Kivi Capital LLC	**Gurgaon, India**
Quantitative Researcher	*June 2020 - Present*

○ Performed statistical research to isolate patterns in forex assets and developed the complete portfolio
○ Modelled portfolio performance on historical data to manage crucial operations such as risk-management, identifying liquidity evolution, fill rate and slippage analysis
○ Led the design and development of low latency systems to execute trade signals at Stock Exchange

Programming Projects

Video Deraining and Content Alignment	**IIT Guwahati**
Prof. Arijit Sur, Dept of CSE	*Fall 2019*

○ Surveyed state-of-the-art methods to generate synthetic rain patterns in video frames, necessary to train models to remove rain and haze from videos
○ Proposed and implemented an improved algorithm for video compensation and deraining, which obtained 9% improvement in PSNR value on synthetic datasets

Disaster Prediction and Rescue Management   **Microsoft**
CodeFunDo++, National Hackathon   *Fall 2018*
- Proposed a prediction system to generate flood warnings based on the historic data of water levels of rivers across India
- Developed a framework for end-to-end preparation of evacuation and management of flood rescue

Underwater Perception and Object Recognition   **IIT Guwahati**
4i Labs, Technical Board   *Spring 2017*
- Developed the surveillance system for Antahsagari, a remotely operated underwater vehicle
- Created a dataset of underwater objects consisting of over 50 high resolution videos, used for training
- Implemented state-of-the-art algorithms to detect objects in low visibility conditions and perform localization and mapping of the underwater environment

Relevant Coursework

STATISTICS & DATA SCIENCE	Generalized Linear Models, Statistical Analysis of Financial Data, Monte Carlo Simulation, Probability Theory and Random Processes, Stochastic Calculus for Finance
MATHEMATICS	Matrix Computations, Scientific Computing, Multivariate Calculus, Differential Equations, Real and Complex Analysis
COMPUTER SCIENCE	Computer Vision using Machine Learning, Parallel Computing, Databases, Algorithms, Computer Networks, Operating Systems

Technical Skills

LANGUAGES	Python, C/C++, MATLAB, C#, Bash
FRAMEWORKS	Pandas, Numpy, Scipy, Pandas, Keras, Scikit, SimPy

Awards and Achievements

- **InfosecIITG :** Founding member of the Information Security group, ranked **298** globally (in 2020)
- **InterIIT Tech Meet 2019 :** Represented IIT Guwahati in information and security event at IIT Roorkee
- **Defence Research and Development Organization, India :** Runners-up in national level competition for development of surveillance system in the underwater robot Antahsagari, *DRUSE 2018*
- **Microsoft Code.Fun.Do++ 2018 :** Runners-up in national level competition
- **Analyze This 2018 :** Top **1%** among 2700+ teams in the flagship hackathon by American Express
- **HackOverflow :** Runners-up in the annual fest by Department of Mathematics, IITG for developing an application to convert paper-based forms to digital records stored on cloud
- **Joint Entrance Examination 2016**: Among top **0.1%** out of 1.2 million students

Event Organization and Talks

- **Hackerearth** : A two-day data science hackathon by *Hackerearth* registering over 100 teams
- **Dimension** : Flagship data science event during annual fest of Dept of Mathematics, IITG
- **Technothlon** : The school championship testing aptitude and critical thinking ability among school students, observing over 50,000 participation
- Presented several talks on state-of-the-art object recognition algorithms, Underwater Survey Systems and preparatory topics on Operating Systems and Computer Networks