Gunratna Borkar

Metallurgical Engineering and Materials Science

Indian Institute of Technology Bombay

Specialization: Metallurgical Process Engg.

19D110004

Dual Degree (B.Tech. + M.Tech.)

Gender: Male

DOB: 11/03/2002

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2024	

PROFESSIONAL EXPERIENCE

Data Science Internship | **Vislesha Pvt Ltd** [July '23 - Present]

*Received a **Letter of Recommendation** from the **CTO** for exceptional analytical skills and steadfast dedication*
- Implemented **30+** analyses with **10-Fold increase** in performance for **2M+** transaction records utilizing **PySpark** and **SQL**
- Achieved **97%** accuracy in predicting the dormant customers by using **SVM** and **Logistic Regression** algorithms in Spark
- Utilized **FPGrowth** and Apriori algorithms for **market basket analysis** to reveal intricate purchasing patterns of customers
- Leveraged **K-means** and **DBSCAN** algorithms to uncover **5** pivotal clusters within the Consumer Packed Goods dataset

Marketing and Strategy Internship | **Edvizo Pvt Ltd** [Jun '22 - Jul '22]

*Received a **Letter of Recommendation** from the **Co-Founder** for exemplary problem solving skills and strong work ethic*
- Spearheaded the sponsorship team to onboard **10+ partners** for the flagship NLCEE program targeting **10,000+** students
- Conducted comprehensive **Market Research** on Ed-Tech and Gaming industry, cultivating a targeted assortment of sponsors

KEY PROJECTS

Sentiment-Driven Recommendation System | *EE 769 Course Project* [Mar '23 - May '23]
- Engineered a hybrid recommender system with **Sentiment Analysis** utilizing matrix factorization and collaborative filtering
- Achieved **91%** accuracy and F1 score of **0.8** using an ensemble of **SVM**, **LSTM** and **VADER** for classifying movie reviews
- Leveraged techniques like Lemmatization, Vectorization and **TF-IDF** for effective feature extraction from the textual data

Multi-Asset Portfolio Optimization | *MM 656 Course Project* [Jan '23 - Mar '23]
- Employed **LSTM**-based model for predicting stock returns, achieving a **34%** reduction in MSE compared to **ARIMA** model
- Yielded **25%** higher Sharpe ratio by leveraging **Markowitz** model for optimizing top 5-10 stock portfolios of varying sizes
- Observed a **15% superior** risk-adjusted return in a top **7 stock** portfolio over other equi-weighted and stochastic strategies

Cricket Ball Trajectory Estimation | *WiDS* | *Analytics Club, IIT Bombay* [Dec '22 - Jan '23]
- Developed a physics-based **RNN** model with **PyTorch** to forecast cricket ball speed and release angle for precise stump-hitting
- Improved accuracy to **88%** by utilizing **AdamW** optimizer to train the network, considering wind speed and pitch conditions
- Simulated **2D** and **3D** trajectory of the ball and implemented custom data preprocessing **pipelines** to handle data generation

YOLO-Based Object Detection | *Self Project* | *deeplearning.ai* [Jan '22 - Feb '22]
- Leveraged the **YOLO** architecture for **One Shot** Object Detection for efficiently detecting **Bounding Boxes** around cars
- Utilized **image processing** techniques to establish the motion trajectory of the cars across 2 time frames to predict speed

POSITION OF RESPONSIBILITY

Teaching Assistant | *MM 435* | Guide: Prof. N. Khosla [Aug '23 - Present]
- Collaborating in a team of **6** and providing guidance to **120+** undergraduate students in instrumentation and controls lab
- Facilitating the instructor in seamless **coordination** and **execution** of weekly instrumentation experiments and doubt-solving

TECHNICAL SKILLS

Programming [Packages]:	Python [PySpark, PyTorch, Scikit-Learn, Pandas, OpenCV, Tensorflow], R, Matlab, C++
Softwares and Tools:	MySQL, Tableau, Power BI, Git/Github, Anaconda, Microsoft Office, LaTeX, Solidworks
Relevant Courses:	Statistical Machine Learning and Data Mining, Deep Learning, Simulation & Optimization

EXTRACURRICULAR ACTIVITIES

Sports	• Bagged **1st** position in Cricket League, outperforming **10+** teams from the MEMS department	['23]
	• Attained **3rd** position in department's Treasure Hunt competition, outperforming **20+** teams	['22]
Volunteering	• Mentored **4** students at **Summer of Science** for a project focused on analysis of stock market	['22]
	• Volunteered to manage a crowd of **5000+** in Half Marathon organized by **Team Zero Waste**	['19]
Culturals	• Successfully completed a **year-long** course in Indian Classical Music under **NSO** Vocals, IITB	['19]
	• Performed music in LTPCSA at the annual event **Anjali**, on the occasion of **Gandhi Jayanti**	['20]
Misc.	• Presented a **research poster** to a panel of professors at Metals and Materials Summit, IITB	['22]
	• Completed a **Finance Bootcamp** conducted by Learners Space, IIT Bombay and extensively analyzed the Indian Passenger Vehicle Industry by utilizing the **Porter's Five Forces Model**	['20]