

SHASWAT GUPTA

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ETH Zürich

MSc Computer Science, Large Scale AI Engg., Cloud Computing, Deep Learning, GPA: 5.25/6

Sept 2023 – Present

Zurich, Switzerland

Indian Institute of Technology Bombay (IIT Bombay)

B.Tech. in Mechanical Engineering, Rank 1/165, Gold Medalist, Highest GPA in batch: 9.6/10

July 2018 – Aug 2022

Mumbai, India

Professional Experience

AB InBev — Growth Analytics Center

Aug 2022 – Aug 2023

Full Stack Data Scientist (full-time, 6 months)

Bangalore, India

- Led US supply chain optimization delivering \$2.4M annual savings via ensemble forecasting (Prophet, SARIMAX, XGBoost)
- Rapidly promoted in 6 months; led 3-analyst team, received prestigious 'Pitcher' Award for Global Impact among 200+ employees

Associate ML Engineer (full-time, 6 months)

- Engineered end-to-end ML solutions for 2,000+ US distribution routes; earned 'Pint' Award for Exceptional Performance
- Built production-grade forecasting pipeline and Gurobi-powered integer programming optimizer & scenario simulator for logistics

Data Science & ML (internship, 2 months)

May 2021 – Jul 2021

- Developed ML-powered product recommendation engine using SVD/NMF algorithms, driving \$6M annual revenue growth
- Outperformed existing models by 30%, Awarded Best Intern among 100+ peers; received full-time Associate ML Engineer offer

Growth Source Financial Technologies (Protium)

Apr 2020 – Jul 2020

Data Science (internship, 2 months)

Mumbai, India

- Engineered combinatorial optimization model for MSME debt portfolios and an AI-driven loan recommendation engine
- Built automated pipeline for time-based yield analysis across 600+ debt securities; received partner-signed recommendation.

Research Experience

Institute for Machine Learning, ETH Zürich

Jan 2024 – Present

Machine Learning Research Projects & AI Engineering

Zurich, Switzerland

- Large Scale AI Engineering:** Engineered PyRecover module for distributed checkpointing and auto job resubmission in distributed GPU training. Significantly improved fault tolerance across HPC clusters and reduced compute waste
- SimpleSleepNet:** Developed modular self-supervised contrastive learning framework for EEG-based sleep stage classification (80%+ accuracy, <1MB model). Evaluated 13 signal augmentations across 5 categories *PyTorch*, *Slurm HPC*, *Deep Learning*
- DeepSleepBench:** Benchmarked self-supervised pre-training paradigms (Contrastive, Masked, Hybrid) for EEG signals across neural architectures. Engineered latent space quality metrics, establishing CNN+Attention with contrastive objectives as optimal

Chair of Technology and Innovation Management, ETH Zürich

Mar 2024 – Present

Research Assistant supervised by Prof. Dr. Stefano Brusoni

Zurich, Switzerland

- Enterprise ML/AI Adoption Research:** Designed data pipeline and statistical analysis framework for 600+ enterprises. Automated 10,000+ statistical tests with dynamic visualization, reducing analysis time by 80%. *Python*, *scipy*, *OpenAI API*.
- Unicode Technical Standards Analysis:** Built document crawlers and classifiers achieving 96% accuracy across 30+ categories. Engineered parallel keyword extraction and optimized LLM integration *Python*, *BeautifulSoup4*, *NLTK*, *concurrent.futures*.
- Semiconductor Patent Analysis:** Developed asyncio-powered data acquisition system (20x faster) and BERTopic modeling identifying 80+ technology clusters. Visualized technological shifts across 40+ years. *Python*, *BERTopic*, *HDBSCAN*, *PyTorch*.

Industry Research Projects

2019 – 2021

Research Associate across global academic and corporate organizations

India

- World Bank, Energy Strategy:** Spearheaded quantitative analysis, economic modeling and 10-year demand forecasting of conventional fuels against cleaner alternatives across three nations. Created market readiness framework for energy policies.
- Indian School of Business, Epidemiological Modeling:** Conducted advanced SIR modeling & geospatial analysis with Prof. Sarang Deo for 3,200+ agricultural markets serving 12,800+ villages, informing the Government's COVID-19 procurement policy.
- RephraseAI (Forbes 30-Under-30), Synthetic Media:** Contributed to AI-generated synthetic video technology startup (acquired by Adobe). Showcased video synthesis platform at AWS AI Conclave '19 to 100+ C-suite executives

Honors & Skills

Awards & Distinctions

- Gold Medalist, Department Rank 1/165, IIT Bombay (2022)
- Institute Academic Award (Top 2 students), IIT Bombay (2021)
- AB-InBev 'Pint' & 'Pitcher' honors for excellence (2023)
- Member, Mensa International High IQ Society (99+ percentile)
- OPJEMS Scholar (Top 3/1100+), IIT Bombay (2021)
- KC Mahindra & Heyning-Roelli Scholar (2023)
- International Student Delegate: Harvard, Princeton (2021)

Technical Skills

- Programming:** Python, C++, SQL, Bash/Linux
- Machine Learning & AI:** PyTorch, TensorFlow, scikit-learn, XGBoost, Hugging Face Transformers, LLMs, OpenAI API, LangChain, CatBoost, LightGBM, BERTopic
- Data Engineering:** Pandas, NumPy, PySpark, Polars, PyArrow, Scipy, Snowflake, statsmodels, PostgreSQL, BigQuery
- MLOps & Cloud:** Git, Docker, Kubernetes, GitHub Actions, AWS (EC2/S3/Lambda), Azure ML, GCP, MLflow