SHASWAT GUPTA

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ETH Zürich	**Sept 2023 – Present**
MSc Computer Science, Large Scale AI Engg., Cloud Computing, Deep Learning, GPA: 5.25/6	*Zurich, Switzerland*
Indian Institute of Technology Bombay (IIT Bombay)	**July 2018 – Aug 2022**
*B.Tech. in Mechanical Engineering, **Rank 1/165, Gold Medalist, Highest GPA** in batch: 9.6/10*	*Mumbai, India*

Professional Experience

AB InBev — World's Largest Brewing Company · **Aug 2022 – Aug 2023**
$100B+ global giant with offices in 50+ nations & iconic brands: Budweiser, Corona Extra, & Stella Artois · *Bangalore, India*

Full Stack Data Scientist (promoted, full-time, 6 months)
- 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 (20× 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

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 global impact (2023)
- Member, Mensa International High IQ Society (99+ percentile)
- OPJEMS Scholar (Top 3/1100+), IIT Bombay (2021)
- KC Mahindra & Heyning-Roelli Merit 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