

NILOY GUPTA

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SUMMARY STATEMENT

I am a machine learning engineer based in San Francisco, focused on research-driven solutions that translate into scalable product impact. I have led initiatives spanning large-scale statistical modeling, distributed model training, low-latency model serving infrastructure, interpretability, and revenue optimization across finance, healthcare, and marketing, resulting in measurable business outcomes. My work bridges foundational ML research and real-world deployment at scale.

EXPERIENCE

Staff Machine Learning Engineer, Tech Lead

Aug 2024- Present

Attentive Mobile, San Francisco

AI Recommendations

- Developing AI/ML models to drive user engagement and e-commerce purchases.
- Led the development of purchase propensity model that **increased revenue per send by 6.7%, reduced send volume by 2.8%**

Chief Technology Officer

April 2023- Aug 2024

Lambent Logic, San Mateo

ML, Data, Backend, Infrastructure, DevOps, Product, People Management

- AI/ML powered Revenue Management platform for pharmaceutical manufacturers.
- **Successfully secured and onboarded a major pharmaceutical manufacturer as a strategic enterprise customer, driving key revenue growth.**
- Built product from ground up. Hired and managed a front-end engineer on-site
- **Raised \$1M pre-seed round**

Tech Lead Manager

Jul 2020- April 2023

Affirm, San Francisco

Computational Finance, Machine Learning

- Created the proposal and vision for the team. Hired and coached 7 full-time engineers: 2 L7, 1 L6, 3 L5, 1 L4, and 2 interns.
- Collaborated closely with product managers, business operations, and legal to meet product KPIs and meet regulatory requirements.
- The team built machine learning models and large-scale simulation systems for optimizing interest rates and length of loans (Efficient Frontier Analysis). **Resulted in cumulative gains of \$15M in contribution margin.**
- Engineering Blog: [Modeling Loan Repayment Behavior and Cash Flow](#)
- Patent Application: [2024/0104645 A1](#)

Staff Machine Learning Engineer, Tech Lead

Sept 2018- Jul 2020

Affirm, San Francisco

Machine Learning Platform

- Built the machine learning pipelines for dataset creation, model training, validation, monitoring, and serving
- Led the launch of numerous underwriting and fraud ML models **with a revenue impact of several million dollars.**
- Built an online feature store for serving real-time model features
- Scaled and open-sourced Shapley algorithm for large-scale model interpretability.
- Engineering Blogs:
 - [Shapkey: Scaling Shapley values with Spark for Interpreting Machine Learning Models](#) [GitHub](#)
 - [An Efficient Online ML Feature Store with Fast Rollbacks](#)

Senior Machine Learning Engineer

Feb 2016- Aug 2018

Yelp, San Francisco

Ad Targeting and Machine Learning Platform

- Trained and deployed machine learning models for online Ad CTR prediction that **improved revenue metrics by 10%**.
- Used a combination of feature engineering, statistical analysis, and ensemble learning coupled with distributed system and web service performance tuning.
- Led a team of 4 developers to build a distributed model training pipeline that scales to billion+ samples.
- Optimized algorithm for online gradient boosted tree **model inference. 30,000 times faster** than XGBoost4J
- Developed a business recommendation model that **increased web-driven reviews by 6%**
- Engineering Blogs:
 - [Growing Cache Friendly Trees](#)
 - [Building a Distributed Machine Learning Pipeline](#)

Software Engineer

Jun 2012- Jun 2014

Goldman Sachs, Bengaluru

Financial Data Analytics and Management

- Designed and developed enterprise systems for financial data management. Worked extensively with Java application stacks, web services, and information retrieval systems.

EDUCATION & CERTIFICATIONS

Master of Computational Data Science, Carnegie Mellon University, Pittsburgh, PA

Dec 2015

School of Computer Science, GPA: 4.01/4.33

Bachelor of Technology Computer Engineering, National Institute of Technology Karnataka (NITK), India

May 2012

Department of Computer Science and Engineering, GPA: 9.32/10, Rank 2

SELECTED PATENTS AND PUBLICATIONS

140+ citations, Google Scholar Profile: <https://scholar.google.com/citations?user=Qfr88CMAAAAJ&hl=en>

- System for Optimization of Financing Programs, [US20240104645A1](#) [In Review]
- Growing Cache-Friendly Decision Trees, SysML, 2017, Niloy Gupta, Adam Johnston
- BioNLP 2017, Association for Computational Linguistics, 2017, K Chandu, A Naik, A Chandrasekar, Z Yang, N Gupta, E Nyberg
- Tackling biomedical text summarization: Oaqa at bioasq 5b, BioNLP, 2017, Khyathi Chandu, Aakanksha Naik, Aditya Chandrasekar, Zi Yang, Niloy Gupta, Eric Nyberg
- Learning to answer biomedical factoid & list questions: OAQA at BioASQ 3B., CLEF (Working Notes), 2015, Zi Yang, Niloy Gupta, Xiangyu Sun, Di Xu, Chi Zhang, Eric Nyberg
- Learning by creating: Interactive programming for Indian high schools, IEEE International Conference on Technology Enhanced Education (ICTEE), 2012, Niloy Gupta, N Tejovanth, Preeti Murthy
- Educational computing for the blind in India: design, development and learning impact, IEEE Fourth International Conference on Technology for Education, 2012, Niloy Gupta, Ananthatejas Raghavan, Madhuri Shanbhogue, Agraj Jain

AUTHORED OPEN SOURCE PROJECTS

- [Shparkley: Scaling Interpreting Machine Learning Models](#) [74 stars, 15 forks]
- [XGBoost Predictor Java](#) [27 stars, 6 forks]
- [Scalable Simple Random Sampling](#) [8 stars, 2 forks]

AWARDS

IEEE Senior Member	2024
BioASQ Winning Team , Challenge on large-scale biomedical semantic indexing and question answering	2015
Gold Medalist, Best All Round Outgoing Student, NITK	2012
IEEE Computer Society Richard E. Merwin Scholarship	2011
OP Jindal Engineering and Management Scholarship	2010
Indian Academy of Sciences, Summer Research Fellowship	2010

SELECT MEDIA MENTIONS

Entrepreneur: Exploring a Chief Technology Officer's Decade Career in FinTech and AdTech Industry	2025
USA Today: Building Large-Scale Machine Learning/AI Systems with Niloy Gupta	2024
The Hindu: New IT tools evolved for visually challenged	2012
Deccan Herald: NITK brain for the blind	2012
Times of India: NITK students develop an assistive technology for blind	2012

TECHNICAL SKILLS

Python	Java	Airflow
Bash Scripting	Spark	Metaflow
Ray	AWS	Snowflake
SQL	Postgres	FastAPI
Terraform	XGBoost	Github Workflows
Kubernetes	Celery	