

## Professional Education & Training

1. **Master of Technology** (Structures) from IIT, Mumbai, 1990-92.
  2. **Master of Financial Management** (MFM) from Jamanalal Bajaj, Mumbai, 1995-98.
- Engineering graduate at the age of 19 and M.Tech. at 21.
  - Training on Financial Engineering for Derivative Pricing Models in NY.

## Skills

- |                                |                              |                             |
|--------------------------------|------------------------------|-----------------------------|
| * Deep Learning, GenAI, LLM    | * Python/ Java/ C/ SQL       | * Ideas to product features |
| * Quantitative Risk Modeling   | * Elasticsearch, ChromaDB    | * Structuring AIML work     |
| * ML – Finance/Legal/Radiology | * Azure AI & OpenAI API      | * Business domain analysis  |
| * NLP, Computer Vision         | * Azure AI Doc Intelligence  | * OO Framework design       |
| * Internal IP, White paper     | * Scikit-learn, Langchain    | * Agile Methodology         |
| * Pytorch/ Keras/ Tensorflow   | * Hands-on AI coding, Github |                             |

## Professional Experience

- Data Scientist, Icertis Solutions, Pune, Aug 20 – Mar 2025
  - Sr Data Scientist, Deeptek Medical Imaging/ AlgoAnalytics (sister concerns), Pune, Mar 16-Jun 20
  - Principal Associate, Gensys Technologies, Pune, Dec 2014 – Feb 16.
  - AVP, Barclays Global Service Centre, Pune, April 2013 – Nov 2014.
  - Senior Manager (Derivative Solutions), Pyxis Systems (closed), Pune, Aug 11 – Jun 12.
  - Solution Architect (Financial Engineer), Sungard, Pune, Nov 05 – July 11
  - Lead Consultant, Kanbay Software India Pvt Ltd, Pune, Aug. 04 – Oct.05.
  - Principal Software Engineer, Parametric Technology Company, Pune, Mar 99–Aug 04.
  - Asst. Manager, Synergy Login Systems, Mumbai, Oct 1998 – Feb 99.
  - Senior Asst. Engineer, Tata Consulting Engineers, Mumbai, Feb 92 – Sep 98.
1. **Star Incentive** by Sungard.
  2. **Letter of appreciation** by Shared Architectural Services group, Kanbay.
  3. **Excellence award** by Parametric Technology for special contributions.
  4. **Stock options** by Icertis.

## Experience Summary

- Specialized hands-on expertise in legal document intelligence (advanced search, classification, & text merge) pipelines using NLU and genAI within RAG-based systems.
- Hands-on experience in user-centric models (product recommendations, clause suggestions, search rankings based on past behavior or contextual cues on user intent).
- Proven ability to translate minimal or high-level requirements into robust AI capabilities.
- Design, build, tune, and evaluate ML and deep learning models for diverse use cases, including NLP, computer vision, dormancy analysis, and recommendation systems.
- Hands-on involvement in designing client-funded pre-sales solutioning, leading R&D initiatives, and delivering intelligent, AI-powered product functionalities.
- Specialized expertise in statistical market risk and derivatives pricing.
- Reported directly to the Chief Data Scientist. Worked with product & engineering teams.
- Technical publications in national and international conferences in Structural Engineering.

## Icertis

### Data Scientist

- **AI based Legal Contract & Amendment Merge (Doc Merge):** Lead contributor on updating an agreement given its amendment with help of GenAI with RAG. Layout extraction, mapping references from amendment to agreement, handling large amendments and reconciliation in the setup of flat chunks of documents. This gives an effective agreement post amendment. The project is recognized as the company's most complex AI assignment. I had proposed this project in internal ideation where there were 70+ entries.
- LLM based agentic **orchestration of user session of queries on legal contracts.** Work on semantic intent parsing, two stage co-reasoning, generating execution plan for a query, user session context representation and query suggestions.
- A **brief comparative analysis of two LLMs** (GPT vs proprietary fine-tuned LLM) for legal attribute discovery on the simple but intuitive basis of prompt complexity which explores effect of fine-tuning on surface-level retrieval. Owned this short-term assignment. It could be expanded into an innovative framework to compare LLM performance on legal text.
- **AI based Contract Risk Review:** Legal review is required to identify risks in agreement. The risks and the review workflow are specified by lawyers. Some of these risks can be complex combinations of different risk factors. Lead contributor in this project that was specifically required for a few most esteemed clients.
- **Iterative Search with Relevance Feedback:** User has certain search intent but unable to express it in initial query. The ill-posed search is iteratively updated based on user feedback available in each iteration so as to eventually satisfy user intent. Solely responsible for this one-year long project with the Chief Data Scientist. This was a research heavy project and created an internal intellectual property (IP) content (including white paper) with several fresh ideas. This project was part of a larger multi-year project.
- **Sourcing optimization** for supplier bid selection. Item and supplier specific constraints. Constraint validation identify any anomalies in hundred thousands of bids and crucial in robust response. I had ownership of this project.
- **Attribute Discovery** Addition of some of the composite attributes not explicitly defined as single, individual fields. This process involves analyzing the document content, recognizing patterns, and suggesting values for attributes based on the context and relationships within the text.
- **AI based Clause Mapping to Library.** When a custom clause is used in a contract, it needs to be associated with its standard form in the library. A smallish user-centric model is developed that uses past user history of mapping clauses as feedback. I had ownership of this project.

## Deeptek/ AlgoAnalytics

### Senior Data Scientist

- Supervised & unsupervised learning (ML) applied to healthcare, finance & retail.
- Structuring ML objectives, data analysis, model building, performance evaluation and integration of models into production.

- Conventional & deep learning models. RNN, CNN and segmentation models. Image & text processing. Clustering, ensembles, model interpretability. Heuristics, Heatmap generation. Session state management. Factorization machines. Word2vec models.
- Research work on data set shift detection and if the supervised ML models can deal with it.

Ownership with hands-on work in all of the following projects.

### **Finance & Retail**

(Please also refer below for profile in Sungard)

- **Dormancy Prediction** for 4 leading brokerage firms for 3 successive problems – dormancy prediction, cross-sale inclination to invest in MF and stock recommendations. Tuning the objective to interpretability of predictions.
- **E-commerce recommendations:** ML for recommendations for electronics hardware e-commerce site. Work on identifying product association rules for better recommendations.
- **Demand Forecasting:** Time series forecasting of stock demand for manufacturing client.
- **Trading Strategy:** Work on MATLAB implementation of trading strategy of universal portfolio & volatility pumping. Concept development, selection of algorithms, implementation.

### **Healthcare**

- Deep learning for **predicting chest pathologies** using X-rays. Work eventually led to product development and a new start-up. The solution is in production.
- Pathology prediction successful for **Plural Effusion and Pneumothorax** where radiologists changed several of their labels after going through model predictions. The success was due to careful selection of loss function.
- Predicting **disease codes from ICU discharge diagnosis** summary text.

### **Gensys Technologies**

Principal Associate

- Client facing consulting role on engineering projects.

### **Barclays**

Market Risk Business Analysis (Risk calculations)

- Requirements definition for risk calculations, and analysis for market risk product team.
- Work on historical VaR and P & L for the investment bank's portfolio hierarchy. IR, FX, equity & commodity assets. VaR components. Delta Co-VaR, stressed VaR, back-testing items.

### **Pyxis** (Company Closed)

Senior Manager (Derivative Solutions)

- Development activities for stock selection based on technical analysis.

## **Sungard Technology Services**

Financial Engineer

- Engaged in market risk and derivatives pricing quantitative work and formulations based on multi-factor volatility models, with sufficient exposure to multi-factor volatility calibrations and Vanna Volga FX volatility calibration. Conducted sticky strike and sticky delta analyses, as well as IR curve building. Performed scenario analysis with shifts in futures and volatility curves, and re-formulated the historical VaR. Addressed challenges such as missing data, discretization of error estimates, adding skews to the volatility surface, and handling IR averaging logic. Deriving pricing formulae in multi-factor vol setup.
- Setting up and managing team for market risk analysis product development with ownership of guiding business analysis, requirements gathering to user testing.

## **Parametric Technology Company (PTC)**

Principal Software Engineer

### Windchill

Windchill is a multi-tiered Java/ J2EE PLM product. Requirements, UAT & development on:

- Conflict Resolution Framework: To handle conflicts in merging large sets of data, product information, assembly structure, classification and associated constraints.
- Client specific critical delivery to avoid potential litigation or non-renewal on dealing with voids in mapping product-information hierarchies. Work on supply chain collaboration.
- Run-time architecture and foundation services. Services included method servers and server manager. Conversant with internals of lifecycle, workflow frameworks.

### Pro/Ship

- Design specs, implementation & QA coordination for Hyundai Heavy Industries for building structural & assembly features of very large commercial ships. C & Unix.

## **Synergy Login Systems**

Asst. Manager

- Performance improved from 8-10 hours to 30-40 minutes for EoD of Integrated Treasury Management Software (ITMS) for CitiBank India. Pro\* C, Oracle & Unix.

## **Kanbay Software Solutions**

Shared Architectural Services (SAS) group in Kanbay

- Analyzing competitor's innovations, writing proposals, resolution of architectural issues, product requirement re-engineering. Consultation on technical designs/ concerns. J2EE.

## **Tata Consulting Engineers**

Senior Asst. Engineer

- Seismic analysis of Nuclear Reactor building (with publications), large industrial structures. Investigation of pipeline & silo burst. Progressive collapse of large reticulated structures.

### **Other (part of management studies)**

- Study of communication structure and pattern in engineering consultancy.
- A year long project on "Investment in Information systems".
- Market survey on what influences people's selection of investment options.