# SENTHIL KUMAR

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- An ML Engineer capable of building NLP applications leveraging deep learning models
- An AWS Cloud Engineer specialized in developing & deploying event-driven Serverless architectures
- A Generative AI Engineer immersed in the development of agentic apps and LLM api-powered products
- Total Exp: 14 years; Data Science & NLP Exp: 10/14 years; Cloud Engineering: 4/14 years

## WORK EXPERIENCE

**Lead ML Engineer, Toyota Connected India**                                        **Jul 2022 – Present**
- Build BackEnd data pipelines and NLP applications in AWS cloud to aid Connected Car customers
- Published 4 articles in TCIN medium channel
- Presented a seminar on Serverless Python App in PyCon2023

**Lead Data Scientist, Ford, Analytics Team**                                        **May 2018 – Jun 2022**
- A hands-on **data science developer** who co-developed with NLP experts from the US team
- Leveraged open source models for inferencing in dockerized NLP applications

**Assistant Manager, LatentView Analytics (LV)**                                        **Apr 2014 – Apr 2018**
- Roles I played: **NLP Data Scientist**, **Project Delivery Manager**
- Responsible for project scoping and accountable for the delivery of Social Media Analytics projects of 8+ members

**Lead Analyst, Beroe Inc**                                        **Jul 2010 – Dec 2013**
- Produce Market Research reports on how to procure indirect spend categories

## CAREER PROGRESSION & PERFORMANCE AWARDS

| Company | Position Change | Years since joining | Awards/Recognitions |
| --- | --- | --- | --- |
| **Toyota** | Senior ML Engineer to Lead ML Engineer | 1.5 years | 1. Employee of the Month (Sep'23) <br> 2. Hackathon Team Winner (Mar'23) <br> 3. Secured 2nd place in AWS India Mfg Teams Hackathon 2024 |
| **Ford** | Senior Data Scientist to Lead Data Scientist | 1.5 years | Asia-Pacific Recognition Award (May'19) |
| **LatentView** | Senior Analyst to Assistant Manager | 2.5 years | Encore Award (Jul-Sep 2016 quarter) |
| **Beroe** | Promoted twice | 3.5 years | Knowledge Contributor Awards (twice in 2013) |

## EDUCATION

- Bachelors in Engg - Electronics - 8.6 CGPA | Madras Institute of Technology, 2006 - 2010
- State Topper in Physical Science paper (50/50) 2006 TN Engineering Entrance Exam
- 12th Grade - 95% | 10th Grade - 92%

## TECHNICAL UPSKILLING

**Online Courses**
- DevOps on AWS Specialization(4 courses), Coursera-AWS, Oct'24
- Generative AI with LLMs, Coursera-Deeplearning.ai, Nov'23
- DeepLearning Specialization(5 courses), Coursera-Deeplearning.ai, Dec'18 - May'19
- ML Fundamentals for Structured Data (2 courses), Kaggle Learn, Jan-Feb'22
- Applied Text Mining (2 courses), Coursera-MichiganUniv, Jan'18
- GCP Big Data & ML Fundamentals, Coursera-Google, Apr'21
- SQL (GCP BigQuery) Fundamentals, Kaggle Learn, Feb'22

**Skills**

- **Languages**
  - Python, SQL(basics), Markdown, Bash/Shell Scripting
- **Python Libraries**
  - Pandas, SpaCy, Re (Regular Expressions), Transformers, Sklearn, PyTorch, OpenAI, LangChain
- **Tools**
  - Git, AWS CLI, Docker, Python Env Management Tools, AWS Serverless, OpenAI API, Prompt Engineering

# KEY PROJECTS

### Built a Agentic Chat Application | 2024

- Led & contributed to the development of an Agentic Chat application that leverages GPT 4o model
- The chat app integrates with tools and databases to provide intelligent responses to user queries.

### Built a GenAI Platform (X) with a Suite of Applications in AWS | 2024

- Led the development of a unified platform to derive actionable insights from text data
- Key products built via LLM-powered Pipelines:
  - xWorkFlow - Workflow automation tool with a YAML-based prompt engineering system for LLM chaining.
  - xChat - Secure answer engine for customer data interaction
  - xCall Center Solutions – Call center dashboard showcasing metrics from agent-customer interactions

### Serverless LLM-powered Classification Application | 2023

- Leveraged OpenAI paid models (such as GPT-4) to perform hierarchical text classification
- Utilised AWS Lambda functions to throttle the OpenAI API calls at scale

### Contact Center Dashboard - A Speech2Text Dashboard Application in AWS | 2022-23

- Architected a Speech-to-Text dashboard in AWS
- Powered by open-source ML models for speaker diarization and speech-to-text processing

### BERT Fine-tuned Aspect-based Sentiment Analysis Pipeline | 2020-21                    **More Details**

- Built a ML Classification Pipeline to convert customer comments into Aspect and Sentiment pairs

### Personally Identifiable Information (PII) Detection using Named Entity Recognition (NER) | 2020-21   **More Details**

- Annonymized PII in text data by building a NER system using **RoBerta Fine-tuned Transformer model**

### Learn by Blogging | 25+ Articles | 2020 - Present |                    **Blog Link**

- Have been passionately learning and writing about coding, data science and ML since 2020 here