

## Education

- 2010 – 2015 **MS Software Engineering**, VIT University | Vellore, India.  
**University Rank:** 3/337 ; **GPA:** 9.34/10  
Merit scholarship awardee for 4 years, for being consistently in the top 10 ranks.
- 2009 – 2010 **Higher Secondary Examination**, 92%, Sri Sankara Vidyalaya | Chennai, India.

## Experience

- Jul 2017 – **Hankavalshier's**, CTO, Director of Marketing Research | Chennai, India.  
Present
  - Developed strategies and A/B tests for B2B & Social Media Marketing.
  - Built a lead-generator using curated restaurant information provided by ZomatoAPI, to conduct data experiments. (*Python, R, Excel*)
- Jul 2017 – **Independent Trading**, Derivatives & Equities Trader | Chennai, India.  
Present
  - Managing a portfolio of INR 2M, spread across different equity & debt instruments.
  - Developed algorithmic trading strategies using statistical analysis, language processing, and machine learning techniques. (*Python, Selenium, Pandas, Excel, Pytorch, NLTK, Tensorflow*)
- Jan 2017 – **PayPal**, Software Developer II | Chennai, India.  
Jul 2017
  - Worked with Admin, Global Operations, Shipping, and Marketplaces teams in onboarding & integrating funds availability APIs and services. (*C++, Java, REST, SOAP*)
  - Implemented seller-fraud prevention features and saved over \$5M per annum in losses for PayPal. Developed asynchronous messaging systems to handle buyer/seller emails, to block access to funds, and to release funds. Migrated the Funds Availability email pipeline from legacy stack to YAM messaging system.
- Jul 2015 – **PayPal**, Software Developer I | Chennai, India.  
Dec 2016
  - Migrated the Risk Fraud Restriction product from legacy stack to Java based stack and helped deprecate the legacy stack by over 40% in 6 months.
  - Created large-scale systems including web services, REST services, daemons, and libraries for Risk Funds-Availability team. (*Java, C++, Unix, Eclipse*)
- Jan 2015 – **PayPal**, Software Developer Intern | Chennai, India.  
Jun 2015
  - Developed a custom querying & semi-automated statistical reporting system for the Technical Management Team.
  - Reduced the total number of man-hours spent on the reporting process by 85% and built a dashboard for the same. (*Python, Django, Excel, Javascript*)
- Jul 2012 – **VIT University**, Teaching Assistant | Vellore, India.  
Dec 2014
  - Teaching Assistant:** Problem Solving Using C, Data Structures & Algorithms, Programming in Java courses. Taught a batch of 25 students for a grade improvement program. Graded quizzes, assisted instructor in checking the test papers, guided students in weekly problem-solving lab sessions.
  - Lab Student-in-charge:** Software Metrics Lab and Software Testing Lab.

## Technical Skills

- Languages Python, R, C++, Java, SQL.
- Tools  $\LaTeX$ , Excel, MATLAB.
- Libraries Pandas, Pytorch, Tensorflow, NLTK, Matplotlib, Scikit-Learn, Numpy, Scipy.

## Coursework

- Math Applied Probability & Statistics, Linear Algebra, Discrete Mathematics, Multivariate Calculus.
- CS Artificial Intelligence, Theory of Computation, System Programming, Operating Systems.
- MOOCs **Audited Specializations:** Algorithms (Princeton), Statistics with R (Duke), Data Science (JHU), DeepLearning.ai.

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## Projects - Research/Development

- June 2018 – **Cryptocurrency Price Prediction Using Deep Learning**, ALGORITHMIC TRADING.
- Sep 2018
  - Developed a volatility driven trading strategy for Cryptocurrencies with the time-series from Kaggle.
  - Implemented two models to predict the nature of change of price relative to current time: A neural-network with one hidden layer and a ReLU activation function & a Deep Learning model based on LSTM. (*Python, Scikit-Learn, Numpy, Scipy, Pytorch*)
- July 2018 – **Tesla Stock Price Change Prediction Based on Elon Musk's Tweets**, ALGORITHMIC TRADING.
- Sep 2018
  - A hybrid prediction model that combines a time series neural network model and a language processing model.
  - Implemented an ARIMA model that tracks and predicts the time series data of Tesla stock and a language processing model that uses a gaussian process with bag of words feature vectors and fixed rule multi-kernel learning for sentiment analysis of Elon's tweets. (*Python, Scikit-Learn, Numpy, Scipy, Pytorch, NLTK*)
- Jan 2018 – **Statistical Analysis & Modeling Projects**, ALGORITHMIC TRADING.
- July 2018
  - Implemented Black-Scholes & Binomial Option Pricing Models.
  - Constructed an equal weighted portfolio of NASDAQ stocks for optimal tracking error, sample-size, and returns.
  - Performed exponential smoothing & forecasted stock prices using Linear Regression.
  - Performed an empirical study on the performance of Indian Gold & Equity ETFs for statistical arbitrage opportunities.
  - Conducted a statistical analysis study on performance of IPOs in India and studied a potential investment strategy. (*Python, R, Excel*)
- Oct 2017 – **Predicting Stock Price Change Using Sentiment Analysis**, ALGORITHMIC TRADING.
- Mar 2018
  - Applied a classifier-predictor model using Naive-Bayes classifier algorithm to tweets and news headlines.
  - Implemented a multi-label classification algorithm to identify the risk factors from SEBI filings of NIFTY50 stocks using K-Nearest Neighbor algorithm and predicted the possible nature of change in price. (*Python, Selenium, Excel, Pandas, R, NLTK*)
- July 2017 – **B2B Lead Generator Using Restaurant Information & Text Analytics**, HANKAVALSHIER'S.
- Mar 2018
  - Utilized the countrywide restaurant information curated and provided by ZomatoAPI to create data-visualizations and build analytics reports.
  - Applied text-mining using high efficiency Support Vector Machine (SVM) model to restaurant reviews and identified the potential matches in restaurants. Improved the lead-generation and client-conversion rate from 20% to 65%. (*Python, R, Excel*)
- July 2013 – **Evaluating Neural Networks For Time-Series Forecasting**, UNDERGRADUATE THESIS.
- Dec 2013
  - Evaluated reinforcement learning approaches and optimization methods for the time-series forecasting problem.
  - Proposed a two-step hybrid model using neural networks to forecast the exchange rates of five currency pairs. Final model trained with Levenberg-Marquardt algorithm to forecast currency exchange rates with ~95% accuracy. (*MATLAB, Excel*)
- July 2010 – **Course Projects**, VIT UNIVERSITY.
- Dec 2014
  - Lymphatic Filariasis Reporting System** - A Healthcare web application for managing the progress data of Filariasis patients. (*MySQL, PHP, CSS, HTML5*)
  - Online Hostel Counseling Management** - A pilot web application to manage the hostel counseling process at VIT and thereafter manage student data throughout the year of stay. (*C#, ASP, CSS, Oracle*)
  - Cloud Based Software Version-Control System** - Built a cloud based small scale dev-ops version control system for the course department. (*Ruby on Rails, Node.js*)

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## Academic/Extracurricular Awards & Leadership Achievements

- Co-founded an artisanal food products manufacturing company, led a team of seven, built a data driven market research strategy, improved revenues by 7x, profits by 4x between 2016 and 2018.
- Chancellor's academic excellence merit scholarship** awardee (top 10 ranks) 2011 – 2015.
- Mentored pre-final year students at VIT University as part of a career fair workshop.
- Coordinated the intern-show off, won the **Best intern product** and **Best poster-design** prize, and was awarded INR 10,000.
- Coordinated PayPal's India product showcase challenge and built an internal leaderboard tool (*using Node.js and MongoDB*) to track the results real time. Hosted the challenge and compered the events.
- Was part of a team of 5 which stood 3rd in the PayPal Risk Hackathon 2016.
- Won a poetry competition conducted by the VIT English Literary Club.
- Led the team that won the PayPal Annual Cook-Off Challenge 2016.