

## Professional Profile

A techno-functional data leader and a cloud architect with combination of strategy, operations and technology expertise and strong qualifications in information systems, data strategy, data management, AI/ML and analytics, cybersecurity, risk management and regulatory matters. Successful track record of leading a team of data and technology professionals responsible for executing TE's Enterprise data science strategy, self-service Business Intelligence and Advanced Analytics, AI/ML solutions. Able to leverage a heavy dose of mathematics and applied statistics with visualization and a healthy sense of data exploration.

- Strong background in mathematical optimization, machine learning, mathematics/statistics & algorithms.
- Highly adept at creating AI and ML solutions with deep learning frameworks such as TensorFlow and Pytorch.
- **20+ years data warehousing experience in data modelling, data mining, numerical optimization, control systems, data management, data story-telling and applied machine learning**
- Proficient in: Python (scikit-learn, numpy, scipy, pandas), R, SQL, Keras & TensorFlow
- Experienced with large BI implementations where big data volumes and complex EDW architectures were deployed

## Education:

**Executive Training, Leadership & Digital Transformation:** Ivy League School  
(November 2021)

**Ph.D Candidate in Information Systems (AI & CyberSecurity) :** BCD University (2024)

**Masters in Data Science (2017-2019) :** EFG University (GPA 3.97)

Graduate courses taken include:

- Management, Access & Use of Big & Complex Data
- Social Media Mining
- Statistics for Decision Making
- Business Simulation & Optimization
- Data Visualization
- Applied Machine Learning
- Distributed Computing Using Spark
- Elements of Artificial Intelligence
- Natural Language Processing
- Network Science & Graph Theory

**BS in Statistics (1986-1990):** Top Global University

**Analytics & Security Certifications :**

- **ISC2 – Systems Security Certified Practitioner**
- **Comptia Certified Security+**
- Certified Analytics Professional(CAP) from INFORMS.org
- Certified TensorFlow 2.0 Associate
- **CyberSecurity for Managers from US Dept. of Homeland Security**
- **CyberSecurity and Executive Strategy from Stanford University**
- **Cisco Certified CyberSecurity Associate**
- AWS Certified Solution Architect
- AWS Certified Machine Learning Specialist
- AWS Certified Developer Associate
- AWS Certified Data & Analytics
- **AWS Certified Security Speciality**

**MicroMasters in Statistics & Data Science (2020 – 2021) :** Top Tier School

**Artificial Intelligence & Deep Learning Nanodegree :** Online

**Data Engineering on Google Cloud Specialization :** Online

**Certified Data Scientist(Python):** Bootcamp

*Relevant Courses:* Supervised learning using SCIKIT-LEARN, NUMPY & PANDAS, Deep Learning in TensorFlow & Keras in python, Databases and Network Analysis in Python, Jupyter Notebooks, Data Visualization (Matplotlib,Bokeh,Altair)

**Certified Data Scientist(R) :** University/Online, Bootcamp

*Relevant Courses:* Data Cleaning & Exploratory Analysis, Statistical Inference, Regression Models and Practical Machine Learning, GGLOT, R Markdown & Shiny Web Applications

**Core Competencies**

**Strategic Thinking:** Able to influence the strategic direction of the company by identifying opportunities in large, rich data sets and creating and implementing data driven strategies that fuel growth including revenue and profits.

**Modeling:** Design and implement statistical / predictive models and cutting-edge algorithms utilizing diverse sources of data to predict demand, risk and price elasticity. Experience with creating ETL processes to source and link data.

**Analytics:** Utilize analytical applications like SAS to identify trends and relationships between different pieces of data, draw appropriate conclusions and translate analytical findings into risk management and marketing strategies that drive value.

**Drive Enhancements:** Develop tools and reports that help users access and analyze data resulting in higher revenues and margins and a better customer experience.

**Communications and Project Management:** Capable of turning dry analysis into an exciting story that influences the direction of the business and communicating with diverse teams to take a project from start to finish. Collaborate with product teams to develop and support internal data platforms and to support ongoing analyses.

**Technical Proficiency:**

- Cloud Computing (AWS/Google Cloud)
- Large-scale, distributed systems design and development
- Scaling, performance and scheduling and ETL techniques
- R, Python, SQL, SAS, ABAP & Javascript
- Tableau & SAP Business Objects

**Experience:**

**Director, Principal Data Scientist & ML Security: Nov 2019 – Present**  
**Client: ABC Technology, Anytown, USA**

Data Insights and Analytics – Enterprise Analytics

- Lead a team of Data Scientists & ML Engineers in creating a data driven strategy, developing analytic solution to improve operation efficiency, and building data pipelines and BI tools to support business
- Work with cross functional teams to build, train and deploy predictive models on AWS including product recommendation engine, safety stock optimization using Bayesian modelling, customer churn & sales and demand forecasting econometric models
- Built a predictive analytics framework to ensure existing and developing models were continually evaluated for risk and effectiveness balancing the business needs and security
- Working with data governance and security team to conduct information security reviews, threat modelling, penetration testing & risk analysis
- Working with executive leadership to partner on establishing a centralized product and security roadmap for data science
- Structured, staffed and built high performance and talented hub & spoke data science teams
- Established Big Data, BI Platforms and Analytics infrastructure enabling data and analytic insights via experimentation, data mining and predictive learning

**Lead Data Scientist : Sep 2017 – Oct 2019**  
**Client: DEF Global Engineering Anytown, USA**

Predictive Analytics - Forecasting & Supply Chain

- Aftermarket parts forecasting (ARIMA models) & Inventory Optimization (MCMC modelling)
- Predictive modelling for estimating shipping date of aftermarket repairs & spares
- Furnace yield improvement through feature engineering, process mining & statistical analysis
- Building additive non-linear forecasting models for F&M simulators across aircraft platforms
- R&O whitespace computation using association mining & Bayesian modelling algorithms
- Develop a Supplier Risk prediction quantitative model using the Bayesian & GBT (Gradient boosting trees)
- Parts Tagging using NLP to drive supplier consolidation and tail spend cost savings

**Senior Data Scientist : Feb 2017 – Aug 2017**  
**Client: DEF Global Engineering**

**Project :** Using deep learning and visual analytics for the early detection of DR (Diabetic Retinopathy) & ARMD (age-related macular degeneration) – leading cause of blindness

- Using special fundus image datasets to develop a deep Convolutional Neural Network (CNN) using Keras and Tensorflow APIs for DR classification
- Training & validating image data to analyze images based on visual characteristics for DR classification
- The challenge is to improve algorithm's training accuracy via feature engineering by looking for tiny signs of hemorrhages and micro-aneurysms, which signal the presence and severity of the disease.

**Data Scientist: Feb 2011 – Jan 2017**  
**Client: GHI Ltd, North America, Anytown, USA**

Work closely with various global & regional teams across the company to identify and solve business challenges utilizing large structured, semi-structured & unstructured data in a distributed processing environment. Was a core team member of the Tableau global implementation project involving designing ETL processes for data mining from SAP ERP,

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SalesForce CRM, and native pricing & railcar management systems. Responsible for implementing data mining and statistical machine learning solutions using Python & R to various business problems such as rail car optimization, trader margin estimate, inventory forecasting and credit risk exposure

- Developed a NLP application for CRM complaints data using skip gram modelling & word2vec algorithm to facilitate prediction of customer complaints in python
- Used TabPy API functionality to integrate sentiment analysis of CRM complaints long texts from within the Tableau workbook
- Analyze and explore large datasets from the Finance and Logistics modules from the SAP HANA system using pyHDB connector
- Developed a regression model in R and integrating with the Tableau dashboard for price prediction by commodities, markets through merging weather pattern data, economic and industry data from USDA.
- Developed a traders margin dashboard that helped the management analyze and investigate fraudulent transactions
- Perform quantitative analysis of product sales trends to recommend pricing decisions from data in the SalesForce CRM system
- Applied data mining to railcar usage optimization problem to maximize efficiency and reduce idle time
- Scrutinize and track customer behavior to identify sales trends and credit risk exposure analyzing data from FSCM (Financial Supply Chain Module)
- Develop statistical models to forecast inventory and procurement cycles to compare against the SAP HANA - Daily Activity Reports(DAR)
- Assist in developing internal tools for Order-to-Cash and Procure-to-Pay data streams
- Promoted enterprise-wide business intelligence by enabling report access in SAS BI Portal and on Tableau Server

**Data Architect: Feb 2009 – Jan 2011**  
**Client: JKL, Inc, Anytown USA**

- Primary responsibility was model development for a sequence-to-sequence problem in an in development medical device.
- Used Tensorflow in Google Cloud for distributed training of dozens of models utilizing architectures like CNNs and RNNs.
- Had to build models that exploited information from multiple time scales. Predictions occurred based on events highly localized in time but also subject to long range dynamics.
- Final model would be deployed for massively parallel inference on a device,

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requiring accounting for memory and FLOPs usage. Both performance profiling as well as theoretical calculations of memory and FLOP usage were used.

- Worked in a software engineering environment, using tools like Jira, Confluence and Git for issue tracking, documentation and version control.

**BI Architect: Jan 2003 – Jan 2009**

**Client: MNOP Inc, Anytown, USA**

- Created and deployed hundreds of time series forecasting models for various sensor readings using an R and deployed in R Shiny
- Created scripts to allow for automatic model evaluation and retraining
- Explored deep learning solutions for question/answering applications.
- Performed exploratory data analysis around the effects of chemical use on oil well failure events.
- Used regression techniques to create a model to predict mean time between failure for oil wells. The final model used approximately 50 variables pulled from a number of sources. In order to deal with small sample sizes ensemble techniques including random forest regressors, gradient boosted machines and stacking were used.
- Performed time series analysis including sales forecasting using promotional data. Integrated results into an interactive app (Shiny). Analysis was done in the R language using aggregations pulled using Hive.
- Prototyped various rules-based time series event identification algorithms and heuristics automating various time series analysis tasks that had been done by hand across the entire organization.
- Used hourly temperature data from public sources to perform spatial (kriging) and temporal interpolation, allowing the estimation of the temperature at an arbitrary time and location within the United States.
- Used supervised machine learning techniques to classify time series based on extracted features

**SAP Engagement Manager: Mar 1997 – Apr 2003**

**Client: QRS Consulting, Anytown, USA**

Provided technical leadership in a team that designed and developed analysis systems to extract meaning from large scale data typically running SAP ERP, SAP BW systems.

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- Mentoring organizations on large scale data and analytics using advanced statistical and machine learning models
- Architected and implemented analytics and visualization components for device data analysis platform to predict hardware performance
- Optimized factors for sales conversions and designed an algorithm for deal recommendations for a large daily deals website