Hi

I'm Sumanth and I am obsessed with how systems function and change over time.
I have two degrees in Engineering and my senior year thesis was an investigation into increasing the penetration of wind energy and other renewable sources into the main grid using tools of Machine Learning (Regression and Time Series) and Deep learning.
I finished graduate school at the University of Toronto where I studied Control system design in the department of Electrical and Computer Engineering. Most of my coursework was in Applied Math while main projects were based in Optimization, Signal Processing and Robotics.
Professionally, I've worked in Risk Consulting (at KPMG) where I lead a small team during the second part of the IT audit of an insurance company for IBM. I also developed strategies for smaller tech companies in best software practices on behalf of clients such as Oracle and Microsoft.
I've also worked at an e-commerce company dealing in wine and spirits where I was responsible for building a pipeline to transform raw data from customer invoices and other sources into a dataset that was to be used in building a product recommendation engine.
The thread which connects both my academic and industrial experiences is my love for data and my investigations into the amount of sense that can be made using quantitative methods. You can check out my GitHub (http://www.github.com/sumanth0892) to see how I code (I love Python, C++, R and proficient in SQL). I love working on datasets from a diverse set of sources, ranging from Movies to Income demographics to even High Energy Particle Physics. I am highly familiar with a wide range of techniques, such as **Regression, Time Series and Artificial Neural Networks, as well as fine-tuning a model for specific results.**
One of my most memorable experiences was working with EWB Canada to propose a FinTech company to alleviate the problem of malnutrition in Haiti. I was responsible for the core business model and convinced my team to adopt a more holistic approach than focusing exclusively on the diet.
I hope to be a Venture Capital investor in the near future, raising funds for promising ventures in Consumer media, Energy, Transportation and Healthcare/Genomics, among other things. This requires me to be both curious and quickly run simulation models on new ideas using software and existing research. I've developed these skills through my professional and academic research endeavours, and most recently, I've been working as a freelance researcher since the current crisis has slowed down recruitment.
One of my other interests is financial history and how a lot of it can be quantified using Time Series.. We expect the markets to be more smooth and have less volatility (as we get more information) and stocks to run steadily in a north-eastern way, but what we've seen are more manias, busts and bubbles from the late 1980s, starting with the Japanese real-estate bubble to the Housing crisis in late 2007.
Hit me up @sumanthpv.venkateshmurthy@alum.utoronto.ca to talk about this application or any of my other interests, such as financial history (Niall Ferguson and Daron Acemoglu are some of my favourite authors!), science-fiction (I love Neal Stephenson and Daniel Suarez) and rock-climbing!

Best
Sumanth

Sumanth Pareekshit Venkatesh Murthy

Budding Technologist and Sensemaker-in-training

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RELEVANT EXPERIENCE

Liquid Analytics, Toronto - *Data Engineer*
2019 - 2019
Liquid Analytics is an e-commerce startup dealing in wine and spirits.
First member on the Data Engineering team..
Worked closely with DevOps and Product management.
Collected data from several sources such as Order forms, Invoices and Customer reviews to understand product preferences among consumers across North America.
Set up an end-to-end pipeline using **Apache BEAM** and stored the final datasets in **BigQuery** while data was updated through increments in a Google Cloud Bucket everyday.
Ran simulations with Decision Trees and Collaborative filtering to test relevance of features.

University of Toronto - Research Assistant and Entrepreneur
January 2016 - June 2019
Research Project 1: Researched the flow of signals and impulses in a squid axon, i.e. an action-potential. I worked on modelling the signal using mathematical methods such as Fitzhugh-nagumo circuits. The second part of the project involved reconstructing this signal using Deep learning techniques.
Research Project 2:I worked on simulating a system consisting of a drone and a rover (acting as a transportation vehicle for heavy parts) and researched communication patterns to increase efficiency on the shop floor. Used theories of Agent-based modelling and Reinforcement learning to deal with obstacles.
Research Project 3: Built an image processing system and a Neural network to detect coral reef damage before they go into a Neural net. The dataset was taken from the University of California, Santa Barbara repository collected near French Polynesia and Ayers Rock, Australia.
Research Project 4: Applied Sentiment analysis to various sources of news/information such as Newspaper articles, Podcast audio, Video clips, Tweets and Blog posts using GloVE embedding to assign a probability for the degree of accuracy and detect any bias, both based on the content of the article/item in question.
Tried to monetize this into a tech venture by combining with Blockchain. This was to be a Social Network which would reject BOTH advertising AND subscription based models to democratize the flow of information.

Triumph Gear Systems, North York — *Project Associate*
January 2016 - June 2016
Worked as a Project Associate at Triumph Gear Systems, an Engineering and Manufacturing company to redesign production and shipping routes for two parts:
Ran simulations to reduce the number of steps from 60 to 33 for a GE Shaft and from 82 to 48 for a Honeywell shaft.
This led to savings of $331,000 on a yearly order of 200 pieces for each part.

KPMG, India - *Risk Consultant*
2014 - 2015
Worked as a Risk consultant in the Contract-Compliance department of KPMG.
Led the second-part of the Metlife IT Audit independently and managed a team of about 15.
Analyzed datasets to recommend strategies to clients such as IBM and Oracle.
Received **high recommendation** from my mentor during my first year

VT University, India - *Research Assistant*
2013 - 2014
Part 1 : Built Statistical learning techniques to analyze data obtained from a wind energy generation facility to predict power output a day ahead and hence aid in load-demand studies and increase the penetration of such resources into the main grid. Main challenges came in the form of absence of frameworks such as Tensorflow and PyTorch.
Model 1: Regression using Temperature, Humidity and Atmospheric pressure.
Model 2: Time Series with ARIMA and Exponential Smoothing.
Model 3: LSTM-based Time Series modelling.
Part 2 : Electro-mechanical modelling of the facility to detect faults and compare the theoretical power output with the actual power output. This was done using Simulink.
Publications:
https://ieeexplore.ieee.org/document/6974632 **as Sumantha Pareekshit**
http://www.ijcrd.com/files/Vol_3_issue_5/041121.pdf **as Sumantha Pareekshit**

SKILLS

Scripting Languages:
Python, C++,R , MATLAB, Solidity

Libraries and packages
Numpy, Scipy,Scikit-learn ,Keras, Tensorflow, Simulink. PyTorch, D3, TorchVision and openCV .

Other: **HTML+CSS, Apache Beam SDK (for data pipelines), ROS Platform for Robotics, Ethereum Blockchain and SQL.**

AWARDS

Winner of EWB Canada business case study contest - Proposed a finTech startup to alleviate poverty in Haiti.

Global Fellow - StartingBloc institute in 2016. DC Chapter

Indo-Canadian delegate : World Business Dialogue 2016

ELITE and Robotics Certification.

LINKS:

Most of my projects and code is available on my Github:
http://www.github.com/sumantho892

LinkedIn:
http://www.linkedin.com/in/sumantho892

EDUCATION

University of Toronto, Canada — Master's Degree in Electrical and Computer Engineering, Control Systems Track
September 2015 - 2018
Vice-President of ECE Graduate Students' Society, Engineers Without Borders.
Relevant Coursework - Supervisory Control of Discrete Event Systems, Hybrid Control Systems and Applications, Digital Image Processing, Video Encoding and Neural Engineering.
As a central theme/project to my research, I investigated the applications of robots in manufacturing systems where heavy parts are made for important applications .
Supplementary Coursework:
Robotics Specialization Coursera - University of Pennsylvania (Grade: 99%)
GPA: 3.45/4.0

VT University - RVCE, India — BEng (Hons.) in Electrical and Electronics Engineering, Mathematics and Nanotechnology minor
September 2010 - July 2014
Quizzing Bowl, Convenor of the Renewable Energy club, 8th Mile.
Relevant Coursework - Renewable Energy Systems, Power System Analysis, Advanced Numerical Theory, High Voltage machines, Control System Engineering, Fuzzy Logic, Microcontrollers, Digital Signal Processing and Linear Algebra.
GPA: 3.8/4.0.