Neelesh Rastogi
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github.com/neelrast
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Python, Java, C++, R, SQL, React, Ruby, Swift

Multi-disciplinary Artificial Intelligence Researcher & Full-Stack Software Engineer passionate about crafting human-centric software designs, translating data into insights, creating visually and functionally impactful products, and designing data-driven experiences.

Education

St. John's University, Bachelor of Science in Computer Science, GPA 3.63 — May 2019

Minor: Mathematics

Coursework: DBMS, Software Engineering, Algorithms, Data Structures, Operating Systems, Natural Language Processing

Math & Electives: Linear Algebra, Probability & Statistics, Calculus, Series, Differentials, Data Mining & Predictive Analytics

Leadership and Awards

Awards: Richard O' Lander Memorial Award, Dean's List (2015-19), Computer Science Honor Society

Leadership: Founder – SJU Artificial Intelligence Lab (***www.sjuai.com***); Organizer – TEDxStJohnsU (***ted.com/tedx/events/24080***)

Experience

Artificial Intelligence Engineer, First Blush, NYC — July 2018 - Present

Blushbot & Emotion Recognition Toolkit *(www.firstblush.io)* : An Emotion Recognition Toolkit for affective dating.

- Developed an Facial Emotion Recognition pipeline using Microsoft FER+ dataset and MobileNet CNN with 91.14% accuracy.
- Lead the chatbot development and curated 230+ skills by analyzing transcribed text-text, text-image datasets.
- Worked closely with cognitive researchers to develop chatbot's persona and a Top-level skill-based dialog selection policy using Topic Index, Conversational Flows & knowledge representation graphs.

Leveraged Knowledge in Swift, CoreML, React, Microsoft Bot Framework, TensorFlow, Keras, MobileNet CNN, NLTK, & Git

Chatbot Architect, Information Technology, St. John's University, NYC — May 2018 – Sept 2018

Thunderbot (*neelrast.github.io/thunderbot*): Social Chatbot for enhancing Information Retrieval and Student Experience

- Created conversational models using NLTK, SpaCy and Keras for automating 15% of low-level troubleshooting processes.
- Created Named Entity Recognition system to analyze help-desk queries for user's spoken intents and route their requests to specified departments.

Leveraged Knowledge in Transcription, Chat Scripts, Selenium, MySQL, Seq-2-Seq Models, Python, TensorFlow & SpaCy.

Data Analyst Intern, Blue Water Trade Works, India — May 2017 – Sept 2017

Optimum Routing (www.bwesglobal.com/optimumrout): Toolkit for Optimized Naval Weather Routing Advisory

- Created a forecasting algorithm to predict pitch, roll & yaw to optimize fuel savings by 8-10% against transparent benchmark
- Trained an SVR-RBF Kernel, using engine and boiler data from 32 ships for predicting minimal fuel and energy consumption on suggested optimal routes with an R2 - score of 82.89%

Leveraged Knowledge in Classification & Regression Algorithms, NumPy, SciPy, Scikit-Learn, Python, Django & Git

Projects & Publications

Personal Website: https://neelrast.github.io (*for additional information and projects)*

Udacity's Carla - Self Driving Car Engineering Program

- Build a Markov localization module combined with real-world mapping services to localize vehicle's position using GPS, LIDAR/RADAR Inputs.
- Designed a planner module to gain traffic sense & distances to allow car to navigate through traffic on a three-lane highway
- Implemented a PID controller & Extended Kalman Filter in C++ to track the environmental noise by fusing together radar/lidar inputs.

Utilized: C++, Python, OpenCV, ROS, Catkin Workspaces, TensorFlow, Keras, LeNet5 & PilotNet CNN, Markov Localization

Real-Time Mapping of Potential Disease Outbreaks via Tweets (Published – FLAIRS, AAAI 2019)

- Created an ETL Pipeline to stream and organize 1.5M health related tweets as time series data from NYC Area
- Used SQL, Dask, NLTK and Gensim for preprocessing the collected Twitter corpora and run feature extraction processes
- Developed a dynamic dashboard to further cluster and visualize, Knowledge Maps, Topic Models and analyzed tweets using D3.js

Utilized: Python, Dask, TensorFlow, Scikit-Learn, Spacy, Genism, NLTK, Twitter API, Flask, HTML, CSS, D3.js

HRI Framework for providing Cognitive Behavior Therapy (Published ICMI, ACM 2018)

- Led a team of developers & researcher assistants to produce dialog flows for generating robot-patient communication
- Conducted multimodal analysis for identifying modal features and utilized Machine Learning techniques to train a social robot to identify and tag studied early signs of depression

Utilized: Linux, Python, TensorFlow, Keras, C++, ROS Nodes, NAOqi, Knowledge Representation Graphs, Neural Nets