VIVEK SURESH RAJ

RECENT UNIVERSITY GRADUATE – JAN, 2021

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SKILLS

ML-Libraries:
Tensorflow/Keras,
Scikit-learn,
Nltk & SpaCy.

Databases:
PostreSQL,
MongoDB and Neo4j.

Tools:
Streamlit,
Android Studio,
VMWare

Linux:
Kali-Linux for ethical hacking.

EDUCATION

Master of Engineering - Geomatics
Data science specialization
University of Calgary, Calgary, AB
Sep 2019 - Jan 2021

Post Graduate diploma program – Electronics and Embedded systems
Fanshawe College of applied science and technology
Sep 2018 – August 2019

Bachelor of Engineering - Electrical and Electronics Engineering

Kumaraguru College of Technology, India.
Aug 2013 – Apr 2017

SUMMARY

Recent graduate with 2 year of academic machine learning experience with university projects, course works and research works.

- **GitHub repository:** vivii9630
- **Personal portfolio** [click *here*]

CURRENT PROJECT:

- Statistical methods in predictive modelling analytics for medical field.

(Supervised by Dr. Maheswari, Professor and Head of dept of Mathematics, Kumaraguru College of Technology, India.)

EXPERIENCE – Graduate Projects

EFFECTS OF BOTTLENECK VECTOR IN CONTROLLED TEXT GENERATION OF ENCODER-DECODER MODEL

University of Calgary, Calgary, AB / September 2020 – December 2020

- Evaluated the generated texts with certain metrics and proposed suitable control methods to improve the text generation at decoder output.
- Worked on effective methods to contain latent semantic meaning of source sequence and to overcome long term dependency parsing.

[Click here for accessing the project]

TIME-SERIES PREDICTION AND GENERATION OF SINUSOIDAL FUNCTION – RNN Modelling

University of Calgary, Calgary, AB / May 2020 – July 2020

- Demonstrated idea of 'Time-series modelling' framework using SimpleRNNCell with TensorFlow.
- Presented results on jupyter notebook containing framework design and development of Sinewave with a set of training recipes.
- Reported the results and discussed on effects of LSTMCell for SimpleRNNCell. ***[Click here for accessing the project]***

THEORETICAL STUDY:

- *"Theoretical study of steady state Markov Chain for language understanding in discrete time and finite space".*
  (Proposed relative algorithm with proof)
- *"Linear stochastic bandit problems"* - Regret analysis on LinUCB. (Literature review)

TECHNICAL SKILLS:

- Fluent in C, C++ and Python.
- Strong in web-scripting languages like HTML/CSS.
- Some experience in tools like Android studio with TensorFlow Lite (TF-Lite)
- Comfortable with Linux OS.
- Familiar with IDE's like Jupyter notebook, PyCharm, Spyder.

WORK EXPERIENCES

APPLICATION BASED PROJECTS

Calgary, AB / September 2019 – Present

DINO – personal voice assistant for University of Calgary.

- Implemented TF-IDF tokenization on web-scrapped corpus for important word within corpus.
- Implemented cosine-similarity b/w vectors to build Rule-based voice assistant. ***(Tools & packages used: pyttsx3 – pyaudio driver installed, speech recognition, weather, newspaper, datetime, webbrowser, wikipedia)***

GENERATIVE AI CHATBOT WITH GPT2 MODEL – OpenAI

- Implemented pre-trained GPT2 model to generate coherent texts for question answering application. ***(Submitted: 12 MAY 2021)***

HONORS & PUBLICATIONS

- **PyPi –** Python library file to compute & analyze structured DataFrame for NaN values in the dataframe. *[Licensed and Publised: PyPi-vivek2dropoffnan v0.0.1]*
- Represented ESRI event – Developed on User Interface part of webapp for developed for health industry from University of Calgary. *[Team – "You know who", February 2020]*
- Vector similarity score-based voice assistant for querying on the University of Calgary – click here for accessing paper
- Seq2seq learning based chatbot with CORNELL dataset using Encoder decoder architecture with attention layer – click here for accessing the paper
- Participated in Hackathon on "Hypothesis testing using z-score and T-test" by *MachineHack* – May, 2020.

REWARDS

DRISYAAN – VEHICLE PROTOTYPE FOR PHYSICALLY DISABLED PEOPLE

Kumaraguru College of Technology, Coimbatore, India / Aug 2016 – Apr 2017

- Developed an android application for facial recognition using GOOGLE VISION API.
- Developed and deployed the program in SoC with INTEL ATOM processor to breakout board for driving motor using L293D under supervision of Asst Prof. Kaliyappan. (Tools used: Android studio, Putty, proteus, WINSCP)

[*Awarded with department's best-project of the year, 2017*]
