Sanij Gyawali

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SUMMARY

I am looking for full-time position in Electrical Engineering; Interested in roles pertaining to **Power Systems** and/or **Data Science/Engineering** and/or **Machine Learning**

EDUCATION

MS, ELECTRICAL ENGINEERING
Virginia Tech
Expected Aug 2020 | Blacksburg, VA
GPA: 3.73/4

BE, ELECTRICAL ENGINEERING
Institute of Engineering, Nepal
August 2015 | Lalitpur,Nepal
Graduated First Class (GPA: 78/100)

SKILLS

PROGRAMMING
MATLAB(4yrs)
Python and iPython Notebook(2.5yrs)
R(1 yr), C(2yrs) and C++(1yr)
SQL(1yr), Arduino(1.5yrs)

TOOLS
GRIDLAB-D, MATLAB/SIMULINK
PSS/E, AUTOCAD, SOLIDWORK
OpenDSS, OpenECA
YALMIP, Gurobi, SeDuMi
Github, Microsoft Office, Latex
Keras, Pytorch and Tensorflow
Numpy, Scipy, Sklearn and Pandas
Matplotlib

MACHINE LEARNING
Regression
Support Vector Machines
Naive Bayes
K-Nearest Neighbors
Decision Trees
Random Forest
XGBoost
Cluster Analyses
Principal Components Analyses
Model Complexity, Bias and Variance
Recurrent Neural Networks
LSTM, Transformers
Convolutional Neural Networks
Image Processing

WORK EXPERIENCE

VIRGINIA TECH | Graduate Teaching Assistant (GTA)
Aug 2018 – current | Blacksburg, VA

- Facilitating students with their lab workouts; updating course syllabus with Professor; grading lab reports and quizzes for a class of 100 students
- Supervised new TAs with curriculum resources and TA-student relationship via GTA training workshops and seminars

KATHMANDU INSTITUTE OF TECHNOLOGY | Instructor
May 2016 – March 2018 | Kathmandu, Nepal

- Instructor for "Power Electronics", "Electrical Measuring Instruments", "Electrical Engineering Material" and "Industrial Electronics" courses for a class of 30-40 students
- Held bi-weekly meetings with department head to discuss the class performance of students, leading to 30% increase in class success rate

PROJECTS

ACADEMIC PROJECTS

- Resiliency Enhancement of Distribution system November 2018
  - Objective was to exploit **microgrid resources to feed critical loads** on a faulted distribution network
  - Dijkstra's algorithm finds most resilient supply path and modified IEEE 37-node system with 6 tie lines got implemented
- Active Power Filter August 2015
  - Undergrad project on the topic " **Three Phase four wire shunt Active power filter using instantaneous P-Q theory as control strategy**" published in **KEC journal of Science and Engineering (KJSE)**, Volume 2, Issue 2, 2015
  - Filter compensated harmonic currents, reactive power and zero sequence current; Instantaneous p-q theory for ref. current
  - Power stage of SAPF consists of current controlled 3-legged power inverter with split phase capacitors in dc side
- Comprehensive Modeling of Distribution System December 2018
  - **Review and critical analysis** on comprehensive modeling of three-phase distribution systems with example implementation using MATLAB scripts.
- DG in Power System Power System Protection | May 2019
  - Effects of **DG on Power system Protection** was studied and reported.
  - Protection issues on Power systems and solutions were presented.
- Data Driven Electrical Load Modeling August 2019
  - Currently working on my MS Thesis with Dr. Virgilio Centeno to develop a data driven dynamic load model using **Phasor Measurement Unit(PMU)** collected data with an intention of supporting contingency simulations to run faster in comparison to contemporary methods.
  - Analyzing and comparing perfomance from **ANN**, **SVM**, **LSTM** and **Transformers**. Programming language of choice is python.
- Results Reproduction Advanced Machine Learning | December 2019
  - Results reproduction from '**Classification of Time-Series Images Using Deep Convolution Neural Networks**' by N. Hatami. Codes and results are presented at: **AML_Project_Fall19**

RELEVANT COURSES

Graduate Levels
-Power Systems Under Abnormal Operating Conditions
-Power Distribution System Analysis
-Power System Protection
-Power System Operation and Control
-Computational Methods in Pwr Engg
-Data Analytics, -Machine Learning

Undergraduate Levels
-Power System Analysis
-Power Electronics, -Electric Machine
-Switchgear and Protection
-Transmission system Design
-High Voltage System, -Instrumentation
-Analog and Digital Control Systems

Online
- Algorithms & Data Structures(Microsoft)
- Intro to CS and Programming(MIT)
- Python for Data Science(UCSanDiego)

INTERESTS

PERSONAL PROJECTS

- Statistical Analysis of UFC Data June 2019
  - This is a **Data Mining project** I did with UFC (Ultimate Fighting Championship) data scraped from Wikipedia.
  - 'Best fighting style', 'Fight finish time trend', 'MMA styles trend' are figured.
- Predictive Modeling of UFC fights Aug 2019
  - This is a Machine Learning based project where I **model UFC fights** to predict the result.
  - XGBClassifier performed best with 60% accuracy.

ACTIVITIES/LEADERSHIP

- **Event Organizer** at Electrical club IOE, Nepal | 2014-2015
- MMA club member Virginia Tech | 2019-current