Bhuvaneshwari Basquarane

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RESEARCH INTERESTS	Astute IT professional pursued graduate education in Computer Science. Highly skilled with an industry experience in the areas of Data Analytics and Insights, Cloud products and services, Machine Learning and Natural Language Processing. Talented individual offering a dynamic skill set and passion for working on successful technical teams.

EDUCATION

Dalhousie University   *Jan 2021 - Feb 2023*

Masters in Computer Science
- Advisor : Dr. Evangelos E. Milios
- Thesis : Personalized Topic Modelling of Domain-Specific Document collections
- CGPA : 4.0/4.3

Pondicherry University, India   *Aug 2012 - May 2016*

Bachelors of Engineering in Computer Science
- CGPA : 9.01/10.0
- Advisor : Dr. J. Amudhavel
- Ranked 2/120 students

RESEARCH PROJECTS

Personalized Topic Modelling Domain-Specific Document Collections *Apr 2022 - Feb 2023*
The users are allowed to provide feedback about the documents/words, which is then used to define a contrastive loss for fine-tuning the pre-trained BERT model used to derive embedding of documents.

Neural Information Retrieval with Unsupervised Pre-trained Semantic Embeddings
Oct 2021 - Mar 2022
Proposes an Information Retrieval engine that takes a short description of the company's business problem in natural language as a query and outputs a list of researchers from Nova Scotia ranked according to the relevance of their research with the query.

Deep Language Model Representation of Document Clustering   *Jan 2021- Aug 2021*
We try to understand how different clustering algorithms combine with dimensionality reduction and a state-of-the-art Deep Language Model over a text corpus taken from the Abstract of research papers in machine learning, natural language processing, and deep language models.

SKILLS

- Programming - Python, PowerShell, Core Java, C++, C
- ETL & ELT tools -Talend, Datastage, and Informatica ETL.
- Cloud Platforms - Microsoft Azure, AWS GLUE and GCP
- Database Systems - Netezza, Oracle, Snowflake
- Continuous Integration and Development Tools - Azure DevOps, GIT, Jira, Bitbucket, PyCharm, Anaconda, Google Colab, Jenkins, Bamboo and Source Tree
- DB Management and Analysis Tools - Azure Databricks & Azure Data Factory, DBeaver, SqlDeveloper, PGadmin & Snowflake UI
- Reporting software - SQL Server Reporting Services, Power BI, Tableau and TIBCO
- Machine Learning - Regression Modeling, Decision trees, Random Forest, kNN Classifier, K-means Clustering, Dimensionality reduction(PCA, T-SNE, UMAP), Feature Extraction, Convolutional Neural Network, LSTM, RNN, GRU, BERT.
- NLP technologies - Text Summarization, Named Entity Recognition, and Information Retrieval, Transformers like BERT, RoBERTa, ELECTRA Deep Language models, Text Classification, Topic modelling.
- Python Libraries - PyTorch, Keras, MLflow, Hugging Face Transformers, spaCy, NLTK, NumPy, scikit-learn, pandas, Mathplotlib, jupyter notebooks

INDUSTRY EXPERIENCE

Data Scientist   *Dec 2022 - Present*
DeepSense
Demonstrated knowledge of TensorFlow and Keras to design various convolutional neural network models in effort to identify percentage cover of kelp and algae species from ocean image dataset ; utilize Python and OpenCV to process image data. Swiftly overcame data imbalance issue by pinpointing models with unequal proportions and augmenting images with minority labels ; created custom function to distribute weight to labels based on frequency in dataset. Applied Absolute error to detect difference between predicted value and expected value to accurately evaluate label errors.

Software Engineer   Dec 2016 - Feb 2021
Tata Consultancy Services, Chennai, India.
The details of projects and responsibilities are as follows :

Senior Data Engineer, *Gordon Food Services*   Apr 2020 - Feb 2021
Collaborated with Packaging analytics team on ETL (Extract, Transform, Load) tasks, maintaining data integrity and verifying pipeline stability using Azure DataFactory framework. Implemented blob storage in Microsoft Azure Gen 2 to inject data pipelines from extracted SAP through AWS Glue. Databricks notebook is used for performing analytics and data processing developed using Pyspark and Spark sql.

Data Analyst, *NielsenIQ*   Aug 2019 - Mar 2020
Orchestrated efficient large-scale software deployments, including testing features and correcting code in Airflow. Worked on the legacy system and interpreted Code refactoring for better code readability and reduced complexity from Shell scripting to Python. Implemented blob storage in Microsoft Azure to inject the data pipelines into the Snowflake data warehouse (SAAS), a cloud-based service. Monitored the operation of assigned programs and responded to problems by diagnosing and correcting logic and coding errors.

Full-Stack Application Developer, *NielsenIQ*   May 2018 - Jun 2019
Worked in migration from Netezza DB to Snowflake warehouse. Developed a tool to copy from on-premise to the cloud, used by multiple teams in Nielsen North America. Worked on the module which extracts multiple dimensions data (market, store, product) from upstream and processed it On-the-fly in Cloud. Worked on multiple performance initiates to increase processing power in the cloud. Used Azure storage services to create a staging area in the cloud. ETL tools are used to create Datastage jobs

Junior Software Developer, *Nielsen-Buy*   Dec 2016 - Feb 2018
Collaborated with design architects and gave a new design that categories products into four segments and mapped it in Metadata management tools based on insights. Have supported the application in addressing environmental and software issues. I have developed the code in Shell Scripting and Python. I have tested using an automation testing tool Talend for the ETL-based application. Introduced methodologies and best practices to enhance product definition and application customization.

PUBLICATIONS   **Bhuvaneshwari B**, published a working proposal researchNS and Volta Data Student Challenge in the 2021/22 contest. [Paper link]
Bhuvaneshwari B, thesis publication Dalhousie library, "Personalized Topic Modelling on Domain-specific document collections."
Bhuvaneshwari B, An Hybrid ACO PSO based Clustering Protocol on VANET published in ACM Indexed International Conference on Advanced Research in Computer Science Engineering and Technology.[Paper link]

SCHOLASTIC   Awarded **Best Presented Project** in the researchNS and Volta Data Student Challenge in the
HIGHLIGHTS   2021/22 contest
Secured the **Star of the Year Award** for my work in Cloud Migration in 2020 from Nielsen Co,
Consecutive **On the spot** award from 2017 to 2019 from Tata Consultancy Services.
Awarded **Best MENTORSHIP 2019 award** was given for guiding students to crack technical interviews.
World rank 306 in **TCS CODEVITA 2016** the international competitive coding contest with over 100000 participants from 63 countries.

POSITIONS OF   **Teaching Assistant, Practical DataScience, Dalhousie University**   Winter 2023
RESPONSIBILITY   *Instructor : Dr. Yannick Marchand*
Responsible for giving tutorials on Python basics and Machine Learning in Python

Teaching Assistant, Machine Learning, Dalhousie University   Summer 2021- Winter 2023
Instructor : Dr. Evangelos E. Milios
Responsible for giving short tutorial sessions on Python, Machine Learning in Python, and Natural Language Processing and setting challenging assignments.