SHILPA (SHIL-PA) NARAYAN (NA-RA-YOUN)

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Experienced Data Analyst/Scientist with over a decade of comprehensive experience in data science, software engineering, and project management. Proficient in transforming complex business problems into manageable, actionable solutions. Adept at developing strong client relationships, managing stakeholders, and executing successful change management. Passionate about using data-driven insights to drive business outcomes and solve challenging problems.

EDUCATION

University of Virginia (UVA), Charlottesville, VA — **Master of Science (Data Science)**
University of Virginia, Charlottesville, VA — **Master of Public Policy**
Anna University, Chennai, India — **Bachelor of Engineering (Electrical)**

RELEVANT WORK EXPERIENCE

Lead Data Analyst/Scientist, ***Division for Diversity, Equity and Inclusion***,
University of Virginia, Charlottesville, VA — ***April 2021 – Oct 2022***

- Successfully deployed an NLP-based Latent Dirichlet Allocation model to analyze thousands of student climate survey qualitative responses, providing valuable recommendations to administrators to enhance teaching and learning strategies
- Designed a predictive model using Imbalanced Random Forest to identify underrepresented students using US Census data, increasing their enrollment at the University of Virginia
- Implemented data pipelines in Python for the automation of data collection, transformation, and aggregation of thousands of student/staff climate survey results, resulting in efficient report generation
- Created data pipelines for automating collection, transformation and aggregation of thousands of student/staff climate survey results and generating reports using python
- Created student dashboards using Python and Qlik Sense to monitor student performance, DFW rates, attrition, and completion rates, track STEM interests and major persistence, benchmark staff engagement surveys, and improve equity in faculty recruitment, providing valuable insights and decision-making support for department Chairs

Projects:

- *Rescuing survivors under tarps - Haiti Earthquake (Machine Learning Algorithms Comparison)*
  Developed and executed five advanced machine learning models (Logistic, KNN, Random Forest, Linear SVC, SVM) using scikit-learn to classify Blue Tarps and accurately locate earthquake survivors. Automated the process to determine the optimal F1-score threshold based on precision-recall trade-off analysis. Conducted extensive hyperparameter tuning and cross-validation through the use of pipelines and grid search, resulting in optimal model performance. Evaluated multiple classification metrics, including accuracy, log-loss, precision, recall, and runtime, to select the most effective algorithm
- *Network analysis for impact of python packages (using python NetworkX)*
  Collaborated on a NSF grant aimed at evaluating the impact of open source software. Utilized network-based statistics, including centrality measures like degree and eigenvector centrality, to identify key players such as packages, developers, and countries. Conducted a comprehensive analysis of software development cost and its correlation with the impact of Python projects, providing valuable framework to conduct simialr analyses
- *Predicting education level using US Census data (using PySpark)*
  Developed a Random Forest machine learning model in PySpark to accurately predict education level of residents based on household characteristics. Utilized Principal Component Analysis (PCA) to effectively reduce dimensions and identify the most significant predictors. Optimized model performance by incorporating graph-based cross-validation methods in PySpark, resulting in efficient runtime
- *Course Recommendation System (Using Neural Collaborative Filtering – not public)*
  Designed an advanced deep learning Neural Collaborative Filtering recommendation model to assist administrators in recommending relevant courses as electives to students, providing personalized educational recommendations and improving student success

Lead Data Analyst, *Institutional Research and Analytics,*
University of Virginia, Charlottesville, VA ***July 2016 - April 2021***

- Designed and created interactive dashboards for the Center for Teaching Excellence (CTE) using Qlik Sense, improving decision-making and enhancing the teaching culture and student learning experience for over 16,000 undergraduate students and hundreds of faculty members at UVA
- Spearheaded the effort to transition over 1500 users from Oracle Discoverer to Qlik View, successfully streamlining 200 finance and student reports into 80 efficient Qlik View modules in a span of 18 months. Expertly managed the product backlog, effectively prioritizing requirements and managing scope to deliver the project on time

Data Analyst, *Syneren Technologies Corporation, Arlington, VA* ***July 2015 - June 2016***

- Spearheaded the Cradle-to-Grave proposal process for a federal agency, effectively gathering and analyzing requirements to drive the proposal process forward.
- Conducted a comprehensive analysis of the requirements, designing innovative technical solutions using data visualization tools. Conducted gap analysis to identify opportunities, making informed bid/no-bid decisions.
- Efficiently managed project timelines, coordinating with team members to ensure timely delivery of milestones, ultimately contributing to the success of the proposal.

Software Developer, *Progress Software, Hyderabad, India* ***March 2012 - June 2013***

- Handled technical issues for global clients in Americas, Europe, and Asia, leveraging in-depth Java expertise to achieve 100% customer satisfaction across all revenue tiers
- Provided expert advice to clients on product usage and report generation best practices, consistently receiving outstanding scores in Team Quality Index (TQI) - a metric measuring technical, verbal, written, and customer interaction skills. Proven ability to resolve complex technical challenges and deliver exceptional customer service

Full Stack Developer, *Hewlett Packard, Chennai, India* ***November 2009 - March 2012***

- Developed a Java based module for 4 projects by analyzing the business requirements which helped Telstra migrate to fiber internet technology and resulted in 46% cost reduction
- Established strong relationship by visiting client site in Australia to bridge gaps and align expectations. Successfully met stringent deadlines associated with the project
- Trained and mentored a team of six interns. Assigned tasks and evaluated their individual performance

TOOLS AND CERTIFICATIONS

- Python *(Pandas, Scikit-Learn, Numpy, Keras, TensorFlow, NLP, NetworkX)*, PySpark, R, SQL, Java
- Power BI, Qlik Sense, Visual Studio, R Studio, R Markdown, GitHub, Office 365 Suite, Smart Sheet, Jira, Confluence
- Advanced Training and Certifications: Equity-minded evidence-based decision making, Grassroots Analytics Leadership, Management Essentials for a Developing Leader, Project Management, Scrum Product Owner, Leading a Lean Transformation, Excellence in communication: Presenting as a Leader