NIVEDHA BALAKRISHNAN
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EDUCATION

San Jose State University — May 2023
Master of Science in Data Analytics (Awarded Academic Scholarship)

Linkoping University, Sweden — May 2020
Master of Science Biomedical Engineering (Master Thesis in Data Analytics and Artificial Intelligence)

Anna University, India — May 2016
Bachelor of Engineering Biomedical Engineering (Awarded Best Outgoing Student of the Year 2016)
Received **Patent from Intellectual Property India** for an innovative product *Nylon Fabricated Bone Immobilizer using Rapid Prototyping* in the field of orthopedics.

TECHNICAL SKILLS

Languages: Python, SQL, MongoDB, R, MATLAB, C#, HTML, CSS, JavaScript.
Visualization Tools: Matplotlib, Seaborn, Plotly, Tableau, Power BI, MS Excel.
Tools and Technologies: Scikit-Learn, TensorFlow, Keras, Pandas, NumPy, NLTK, Flask, AWS.

WORK EXPERIENCE

San Jose State University | Graduate Research Assistant (Jan 2022 - Present)
Research project using ML to discover new drugs to treat thrombosis (Accelerated the process by 10-15 years).
- Developed Two-staged ML pipeline with a **Classification** and a **Regression** model to identify and predict the anti-thrombin peptides and their corresponding inhibition constant value respectively.
  - Tested the model with 10 million peptides and identified 7060 unique peptides with antithrombotic activity.
  - Utilized **Clustering** algorithms to select representative peptides with similar characteristics.
  - Selected top 10 peptides with better chance using docking scores for further research.

Integrum AB, Sweden | Graduate Intern (May 2019 – Jan 2020)
Worked on an AI-based new therapeutic product to reduce Phantom Limb Pain for amputees.
- **Optimized deep learning model** by identifying significant features extracted from EMG signals using **feature selection** techniques in **MATLAB**.
  - Resulted in **8% improvement** in the model performance.
  - Implement these changes to the product design using **C#** for improved functionality.
- Investigated the similarities between different hand movements using **Clustering** algorithm.
  - Assisted in establishing effective therapeutic procedures based on the insights.

Cognizant Technology Solutions, India | Computer Programmer (Jun 2016 – Jun 2017)
*Assisted with healthcare insurance **website development** to enhance customer experience.*
- Developed and tested front-end components of the website using HTML, CSS and JavaScript while ensuring seamless integration with back-end systems.
  - Provided more efficient and user-friendly platforms for customers.

PROJECTS

Aging Clock: Prediction of Age using Biomarkers (GitHub)
Predicting biological age and identifying significant genetic expression corresponding to aging.
- Developed a **deep learning regression** model using **Keras** to predict biological aging and identified important genes associated with aging through the **Feature Importance** method using epigenetic methylation data.
  - Implemented a trained regression model into a **website** by integrating it with **Flask** framework.

Swipe Right: A comparative analysis of popular dating apps (GitHub)
Conducted comparative analysis of dating apps during pandemic to identify common issues and needs for users.
- Utilized **NLP** techniques including **TF-IDF** and **Vader sentiment analysis** to analyse Google app reviews of four main dating apps (Bumble, Hinge, Match, and Tinder) and identified changes in app ratings.
  - Significant app rating changes during COVID-19 emphasize the importance of personal connections.
  - Insights gained from this analysis have the potential to enhance user satisfaction and overall experience.

Developed an End-to-End Analytical Platform using AWS Services (GitHub)
Developed AWS data pipeline for real-time website intrusion detection and continuous monitoring.
- Developed and deployed **end-to-end data pipeline in AWS** using S3, Flink, Kinesis, DynamoDB, Glue, Lambda, and SNS with security measures.
  - Analysed user shopping journey with **Tableau** to provide real-time insights, informing business decisions.

VICE PRESIDENT (Ex PRESIDENT) of the Machine Learning Club at SJSU

Passionate about ML and collaboration, spent two years in ML club to share knowledge with fellow ML enthusiasts.
- Driving the club towards long-term goals and creating a comfortable learning environment for students.
  - Conducted ML hands-on sessions for students, covering beginner to advanced topics.
  - Collaborated with other officers to plan and organize events for the club.