ASHNA ABRAHAM

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Objective

Master Student of Artificial Intelligence with extensive software development experience, strong academic foundation, and a passion for practical application. Eager to contribute my skills and knowledge to real-world projects while gaining valuable hands-on experience. Seeking opportunities to collaborate with innovative teams and contribute to interesting AI problems.

Key Technologies

Languages: PYTHON, JAVASCRIPT, TYPESCRIPT, R **Databases:** MONGODB, DYNAMODB, SQL **Version Controls**: GIT

Cloud Platforms: AWS, HEROKU **CI/CD**: GITHUB ACTIONS, SPINNAKER, JENKINS

Python Libraries: PANDAS, NUMPY, PYTORCH, MATPLOTLIB, SEABORN, TENSORFLOW, SCIKIT-LEARN, SPACY, NLTK, CV2, PYENV

Web: HTML5, CSS3, NODE JS, REACT JS, REDUX, GRAPHQL, PROGRESSIVE WEB APPS (PWAs), SERVICE WORKERS, NPM, REST APIs

Data Science Projects

DIFFUSION IMAGE GENEATOR

Implements forward and reverse Diffusion process trained in CIFAR10 dataset. Trains Attention-Unet model to do denoising process and subsequently image generation. Implements diffusion with and without classifier free guidance. git

BAYESIAN NETWORK BLOOD TYPE PROBABILITY

Using Bayesian networks, compute the probability that someone has a particular ABO blood type given some test results for the blood types of their relatives. Utilises given Prior Probabilities of alleles in different countries. Use pgmpy library to work on Bayesian network calculations. git

ENVIRONMENTAL INDICATORS ANALYSIS

The project studies various environmental indicators from the German state of North Rhine-Westphalia and explore the relationship between different environmental indicators and climate change measured by average yearly temperature in the region. The project also tries to assess the trends and patterns in different environmental indicators over time by analyzing time series data. git

MOVIE RECOMMENDATION SYSTEM

A movie recommendation system based on matrix factorization algorithm implemented with Python Flask framework and react JS front end. The application is based on MovieLens movie rating dataset with additional fields from 'The Movie Database' API's. It is deployed in Heroku git .

FACE RECOGNITION SYSTEM

A Face recognition system developed using embedding from Google's FaceNet architecture, trained to detect the last nine presidents of the US. The implementation is in Python Flask framework with React front end. MTCNN Neural network is used to identify the face bounding box of image, which is fed to a pre-learned FaceNet network to get face embeddings. This embeddings is used to train Support Vector Classifier (SVC) to identify faces (git).

OTHER PROJECTS

Tweet Sentiment Analysis, Sentiment Extraction from Text messages, Melanoma classification from images, Covid Related Article Clustering, Titanic Survival Prediction and Big Market Sales prediction, git.

Education

MSC – ARTIFICIAL INTELLIGENCE 2022 - PRESENT
Friedrich-Alexander-Universität Erlangen-Nürnberg
CGPA: 1.5

BACHELOR OF TECHNOLOGY - ELECTRICAL AND ELECTRONICS ENGINEERING, 2011-2015
Mar Athanasius College of Engineering (Mahatma Gandhi University, Kottayam, Kerala)
CGPA: 8.37/10 - **First Class with Honours**

ALL INDIA SENIOR SCHOOL CERTIFICATE EXAMINATION (12TH), 2011
Central Board of Secondary Education
Percentage: 94.6

Experience

SOFTWARE ENGINEER – DELIVERY HERO SE Germany (2021 August – Present)

Vendor Portal

The vendor portal is a back-office portal open to Delivery Hero partners including local Restaurants and shops setting them for success by providing them platforms to scale their business. The portal enables partners to independently start, run, grow and evolve their business.

- Development of Vendor Onboarding and Incubation Plugin to enable vendor to go live for delivery from the first day.
- Designing, architecting and development of scalable and testable User Interfaces and reusable ReactJS based libraries
- Collaborating with Data Analysts to study user behavior and usability of features using data from Google Analytics tracking.
- Setting up automated Continuous Integration/ Deployment pipelines using GitHub Actions, Spinnaker and AWS
- Development and maintenance of Node.JS based microservices and integration with multiple backend services across platform
- Conduct end user interviews, Works on product Launch plans, feasibility studies, code quality maintenance and mentoring.

SOFTWARE ENGINEER - CISCO (2019 April – 2021 August)

Cisco DNA Center

The Cisco Digital Network Architecture is a network management and command center for enterprise networks.

- Leading development of Device Installation, Network Design and Logging systems
- Implemented dynamic user defined workflows and navigation paving way for improved adoption of product
- Design and development of User Telemetry dashboard to internally identify key customer interests and preferences.
- Improved page loading time and provided offline support using Progressive Web Apps methodology.

SENIOR ENGINEER, PRODUCT DEVELOPMENT – ENVESTNET INC (2015 June – 2019 January)

Executive advisor dashboard & Client Portal

Executive advisor dashboard is a single platform for premium financial advisors to monitor, manage and evaluate financial data of all their clients represented in data charts.

UMP Platform & Tamarac

UMP and Tamarac are rebalancing, trading and reporting platforms mainly for financial advisors housed by financial institutions. The platforms are written in Java and C# respectively.

- Developed java services to ingest, enhance, and load daily trading data into the platform.
- Development of key customer facing pages of Client and Advisor Portals including Accounts, Service Request and Budgeting
- Automated 10+ service requests which were traditionally back-end operations.

Certifications

DEEP LEARNING SPECIALIZATION BY DEEPLEARNING.AI (COURSERA, CERTIFICATE LINK)

Courses

- **Neural Networks and Deep Learning:** Forward propagation, Back propagation, Hyperparameters, Vectorized neural network.
- **Improving Deep Neural Networks:** Hyperparameter tuning, Regularization, Optimization & Normalizing, Gradients, Tensorflow
- **Structuring Machine Learning Projects**: Optimizing metrics, Train/Test/Dev set, Avoidable Bias, Improving performances, Error analysis, Transfer learning
- **Convolutional Neural Networks**: Computer vision, Object Detection, Residual Networks, Inception Network, Keras, YOLO
- **Sequence Models:** RNNs, Language Model, Sequence Generation, LSTM, NLP, Word2vec, GloVe, Attention Model

MACHINE LEARNING SPECIALIZATION BY UNIVERSITY OF WASHINGTON (COURSERA, CERTIFICATE LINK)

Courses

- **Foundations**: Predicting house prices, Sentiment Analysis, Retrieving Wikipedia articles, Recommender & Image retrieval
- **Regression**: Linear, Polynomial regression, Ridge Regression, K-fold validation, LASSO, Nearest Neighbors & Kernel Regression
    - Implement gradient descent, predict house prices using linear, polynomial regression and k-nearest neighbors
- **Classification**: Linear Classifier, Logistic Regression, regularization, Decision Trees, Boosting, precision & recall
    - Predicting sentiment from product reviews, Identifying safe loans with decision trees
- **Clustering & Retrieval**: Nearest Neighbor Search, K-means, Mixed Modeling, Latent Dirichlet Allocation, Hierarchical Clustering

MACHINE LEARNING BY STANFORD UNIVERSITY (COURSERA, CERTIFICATE LINK)

The course includes numerous case studies and applications to apply learning algorithms for text understanding (web search, anti-spam), computer vision, medical informatics, audio and images.

PYTHON FOR DATA SCIENCE AND MACHINE LEARNING BOOTCAMP (UDEMY CERTIFICATE LINK)

- Programming with python and data visualizations methods.
- Libraries: NumPy, Pandas, Matplotlib, Seaborn, Plotly, Scikit-Learn.
- Implement ML Algorithms: K-Means Clustering, Logistic Regression Linear Regression, Random Forest, Decision Trees, NLP, Neural Networks & Support Vector Machines.
- Spark for Big Data Analysis & AWS set up

STATISTICS FOR DATA SCIENCE AND BUSINESS ANALYSIS (UDEMY CERTIFICATE LINK)

- Descriptive statistics, Distributions and Measures of central tendency, asymmetry, & variability
- Estimators & estimates and Confidence intervals
- Hypothesis testing
- Regression analysis

MASTER SQL FOR DATA SCIENCE (UDEMY CERTIFICATE LINK)

- Advanced querying techniques

ARCHITECTING ON AWS (CERTIFICATE LINK)

Achievements

- Hero Power: under We deliver solutions initiative - Delivery Hero July 2023
- Hero Power: under Win as a team initiative - Delivery Hero March 2022
- Connected Recognition: You Amaze 1 award for 'Innovate Everywhere' initiative - Cisco May 2021
- Connected Recognition: You Accelerate 2 award for 'Connect Everything' initiative - Cisco September 2020
- Connected Recognition: You Amaze 3 award for 1st Prize in Hackfest 2019 - Cisco December 2019
- Best Student Placement Coordinator 2014-2015, Training and Placement Cell - MACE 2015