KARTHICK MANIRAM

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SUMMARY

Passionate Full Stack Developer and Data Enthusiast with expertise in front-end and back-end development, data analysis, machine learning, and cloud computing. Skilled in building web applications, solving data challenges, and automating workflows with a strong focus on efficiency and scalability. Hands-on experience in AWS services, ETL pipelines, and machine learning model deployment.

SKILLS

- **Programming Languages:** Python, R, JavaScript

- **Front-End Development:** ReactJS, HTML5, CSS3, Bootstrap, jQuery, AngularJS, PHP

- **Back-End Development:** Flask, Flask-RESTx, Node.js, Express, Bottle, FastAPI

- **Databases:** PostgreSQL, MySQL, SQLite, MongoDB

- **Cloud Platforms:** AWS Services (S3, EC2, Lambda)

- **Machine Learning & Data Science:** Pandas, NumPy, Scikit-learn, Matplotlib, Shiny

- **ETL & Data Pipelines:** Smart Trial API integration, Python automation

- **Data Visualization:** Tableau, Kibana, amCharts, FusionCharts, D3.js

- **DevOps & Deployment:** Docker, GIT, Linux (Ubuntu), Windows

PROFESSIONAL EXPERIENCE

System Developer
Karolinska Institutet - Stockholm, Sweden   Aug 2020 - Present

Key Qualifications and Responsibilities:

- Designed and developed full-stack applications using **ReactJS**, **Flask**, and **PostgreSQL**.

- Automated data management tasks by writing scripts to analyze and compare file sizes and object counts between local systems and **AWS S3 storage**.

- Developed and optimized **ETL pipelines** for Smart Trial API, ensuring accurate and efficient data integration.

- Led sprint planning, deployment, and release management for various projects.

- Administered Docker containers for maintaining and housekeeping in-house applications and databases.

Applications Developed:

- **Genomic Leaderboard:** A logistics utility application that is used to track the status of tumor tissue and blood samples all the way from the clinic to biobank and thereafter to the sequencing lab and bioinformatics facility and finally to reports.

- **Launcher:** A handshake application between back-end python snakemake genomic data analysis pipeline on the server and front-end Angular & HTML UI with the help of python Flask middleware.

- **Curator:** A platform for manual curation of sequencing data results processed by in-house genomic pipelines.

Senior Associate - Application Development
SecureKloud Technologies - Chennai, India   Dec 2018 – Jun 2020

Key Qualifications and Responsibilities:

- Built a healthcare solution front-end based on OCR technologies for efficient document processing.

- Developed facial recognition front-end systems to display user information dynamically.

- Engineered conversational tools for businesses using Google's Dialog Flow chatbot platform.

- Benchmarked query performance across **AWS RedShift Spectrum, Azure SQL Warehouse**, and **Snowflake** with massive datasets.

- Developed **T-SQL** queries for the data science team to fetch data from Azure SQL Data Warehouse.

- Fetched and visualized Apache logs using **Fluentd** and **Kibana**.

Junior Software Programmer
Genome Life Sciences - Chennai, India   Nov 2014 - Dec 2018

Key Qualifications and Responsibilities:

- Developed **cloud-based, end-to-end Next-Generation Sequence (NGS) analysis** software to support diverse genomic file formats and various analysis objectives (single sample, pair, trio, cohort).

- Built **middleware** using **Bottle** Python framework for seamless communication between front-end and back-end systems.

- Integrated **AWS S3** for data storage and **MySQL** databases for efficient data management and retrieval.

- Created **specialized reports** to aid in the interpretation of genomic data, enhancing research capabilities.

- **Monitoring Tool for Genome Explorer:** Developed and implemented a **monitoring tool** to track **AWS cloud metrics**, **instance performance**, and **billing data** for real-time performance optimization and system scalability.

- **Genome Functional Toolkit:** Designed a web-based utility for functional genomics analysis of FASTQ, VCF, and RNAseq files. Integrated AmChart to provide dynamic, data-driven visualizations and reports for genomic data analysis.

EDUCATION

M.E Computer Science and Engineering
Rajiv Gandhi College of Engineering, Sriperumbudur, India   *Graduation Year (2016 - 2018)*

B.E Computer Science and Engineering
University College of Engineering, Kanchipuram, India   *Graduation Year (2010 - 2014)*

ACADEMIC PROJECTS

IOT BASED SMART FARM MANAGEMENT USING ARDUINO TECHNOLOGY (EMBEDDED SYSTEM)
M.E - Rajiv Gandhi College of Engineering   Nov 2017 - June 2018

Project Description

Agriculture has been the primary occupation in our country for ages, but it faces challenges due to rural-to-urban migration. To address this, we are adopting smart agriculture techniques using IoT, including GSM and mobile application-based remote monitoring, moisture and temperature sensing, and wireless sensor networks to continuously monitor soil properties and environmental factors. This concept, created for the welfare of farmers, allows remote control of these parameters via sensors, SMS, and mobile applications interfaced with a microcontroller.

DESIGN A PATTERN FOR OBJECT MODELLING WITH DRAPERY EFFECT (VB .NET)
B.E - University College of Engineering   Jan 2014 - Mar 2014

Project Description

The system, used in textile design and fabric weaving, helps designers assess pattern feasibility by generating various patterns with Pantone colors and a specialized GUI for warp and weft interlacement effects. It allows visual verification of patterns on 2D objects with a drapery effect, enhanced by a special masking technique for improved performance.

REFERENCE CONTACTS

Reference 1:

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