Mohankumar S.

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Objective

Seeking for a position to work with challenging problems in Information Technology, especially in Research and Development with the knowledge and programming skills acquired and thereby grow with the organization.

Academic Details

MCA in Madras Christian College (Autonomous), Chennai affiliated to University of Madras (2012-2015)	85%
B.Sc. (Computer Science) in S.I.V.E.T. College, Chennai affiliated to University of Madras (2008-2011)	63%
HSC in Sri Ramakrishna Mission Boys Higher Secondary School, Chengalpattu, under the Tamil Nadu State Board (2007-2008)	60%
SSLC in St. Joseph's Boys Higher Secondary School, Chengalpattu under the Tamil Nadu State Board (2005-2006)	73%

Skills

- Programming Languages: Django - Python & AngularJS, C, C++, JAVA, C# .NET
- Mobile Platforms: Android (Android Studio with Java)
- Scripting: Windows batch scripting & Linux Shell scripting
- Designing and Scripting Languages: HTML, PHP, JavaScript, CSS
- Web Servers: Apache, Nginx & Microsoft IIS
- Databases: MySQL, MS-SQL Server
- Operating Systems: Windows (Windows 10, Windows Server 2016, Windows Embedded 8.1 Industry Pro), Linux (most familiar with Debian family)
- AWS – EC2, DynamoDB, S3 & Lambda
- Servers - configuration, & soft installations
- Version control applications – Git
- Tools and IDEs: MS Visual Studio 2017, NetBeans 8.2, Android Studio 3.2, ImageJ, Slicer, MATLAB, Adobe Photoshop CS 6.0.
- Content Management Systems (CMS): Drupal 7.54 and Wordpress 5.6 (Basic)

Domain Interests

- Image Processing: OpenCV (C++, python), Pillow (python), EmguCV (C#), SimpleITK, & ImageJ
- Robotics (UR 5E)
- Cloud services: AWS

Experience

1. ***Sudha Gopalakrishnan BRAIN Centre, IIT – Madras, (June 2022 to – present)***

- *Company Overview:*
  The Center for Computational Brain Research at IIT Madras is developing a high throughput computational and experimental pipeline to study cellular architecture, connectivity and molecular architecture in human brains. The project aims to develop technologies including high throughput slide scanner and digitizer technology, 10-100X faster than currently available instruments and a computation engine to handle Giga-pixel and Tera-pixel level images and hundreds of Terabytes of
- *Designation:* Senior Project Engineer
- *Role:*
  Technical lead to the software and integration team. Leading the team to fulfill the internal application developments (web applications, devops & server side scripting), integration of different libraries and hardware & integration of ML/DL algorithms to the existing applications
- *Platform:*
  AngularJS, Python – Django, MySQL, Jenkins, Shell scripting, Docker containers (build & deploy)

2. ***Healthcare Technology Innovation Centre (HTIC), IIT – Madras, (Oct 2015 to – May 2022)***

- *Company Overview:*
  HTIC, a multi-disciplinary R&D centre, is a joint initiative of IIT-Madras and Department of Biotechnology (DBT), Government of India that brings together technologists, engineers, doctors and healthcare professionals, industry and government to develop healthcare technologies for the country. The Centre is located in IITM Research Park which has a vibrant technology ecosystem. To know more about the Healthcare Technology Innovation Centre (HTIC), visit http://htic.iitm.ac.in/

- *Designation:* Project Engineer
- *Projects Worked on:*
  - Sonio – Robotics, Ultrasound device & 3D Reconstruction library - integration (C++)
    - Integration of Universal Robots (UR5E) and the Clarius Ultrasound probe, with the 3D reconstruction library as a low-level API.
  - Artsens – Pendroid (android version)
    - Data acquisition and plotting a real-time graph
  - iQuant Kiosk – Windows
    - Immuno analyser kit, developed as a IOT based kiosk machine. Used AWS, for the cloud services. Base OS is Windows Home SL
  - iQuant – Android platform

        - PoC for implement iQuant in Android
    - iQuant – Windows Embedded
        - Immuno analyser kit, developed as a IOT based kiosk machine. Used AWS, for the cloud services. Base OS is Windows Embedded Industry Pro 8.1
    - iQuant – Linux (C++ with IDS camera integration)
        - PoC for implement in Debian Linux with the integration of IDS camera using C++
    - Retinopathy of Pre-maturity
        - Retinopathy of Pre-maturity (RoP) is the project for early detection of Retinopathy from the set of fundus images. Aim is to stitch all fundus images into single tile image, using EmguCV library (C# wrapper for OpenCV)
    - Automated Diet suggesting tool – web application (Drupal 7.54)
        - Automating the diet suggesting for the patients, based on their allergies, diseases, requirements of calories & others and patient's food habit. Developed using Drupal 7.54 with custom tailored module in PHP

3. ***Ameex Technologies – OMR, Chennai, 9 months (internship)***

- *Designation:* Trainee
- *Projects Worked on:*
  Content Migration of Ubercart Products and User based Discounts – Web application (Drupal 7.54)

Presentations in International Conferences and Publications

- Presented the paper by *S. Kulasekaran, Feminna Sheeba, Joy John Mammen, B. Saivigneshu, S. Mohankumar*, entitled *Morphology Based Detection of Abnormal Red Blood Cells in Peripheral Blood Smear Images* in the **7th WACBE World Congress on Bioengineering 2015, National University of Singapore, Singapore** and was published in the **IFMBE Proceedings, Springer,** Vol. 52, pp. 57-60, DOI: 10.1007/978-3-319-19452-3_14.

- The paper by *Feminna Sheeba, Robinson Thamburaj, Joy John Mammen, Mohan Kumar, and Vansant Rangslang* entitled *Convex Hull Based Detection of Overlapping Red Blood Cells in Peripheral Blood Smear Images* was published in the **IFMBE Proceedings, Springer,** Vol. 52, pp. 51-53, DOI: 10.1007/978-3-319-19452-3_14.

- Presented the poster by *Nithish R., Kathick S., Mohankumar S.* entitled *Watershed Transforms used in the Segmentation of Cells in Peripheral Blood Smear Images* in the **7th WACBE World Congress on Bioengineering 2015, National University of Singapore, Singapore.**

Projects Done (on College)

- ***Segmentation of Overlapping Red Blood Cells in Blood Smear images: as part of the Software Development Lab in V Semester***
    - The project aims at segmenting two or more Overlapped Red Blood Cells in the Blood Smear images. The dip points where the cells overlap is found by analyzing the distance between the centroid and the boundary points of the overlapped blob. To get expected results the blobs are

smoothed using morphological operations before analysis. Based on the number of dip points the overlapped cells are split.

- The Domain of the project is Image Processing
- The platform used is Java with NetBeans 8.0

- ***Content Migration of Ubercart Products and User based Discounts: Project in VI Semester***
  - The project aims at developing a Web Application for a Sensor company to maintain their manufactured sensor products. The Web application is developed using Drupal 7 as front-end and MySQL as back-end. The Site was mainly developed in order to help the user to explore the sensor company's latest sensor product releases, products detailed information and to provide the technical support for the customers. The site also provides online purchasing facilities to order the sensor products and to give discounts for the customers.

Extra-Curricular Activities

- Type-Writing lower level (distinction)
- System hardware assembling, Servers configuration & Networking

Personal Details

DOB	:	Oct 15, 1990
Sex	:	Male
Language known	:	Tamil & English
Nationality	:	Indian
Marital Status	:	Married

Declaration

I hereby declare that the details given above are true to the best of my knowledge and understanding.

Place: Chennai

Date: (Mohankumar S.)