

Immanuel Raj.

Software Architect

Cloud Specialist (AWS)

Machine Learning (Developer)

Professional Profile



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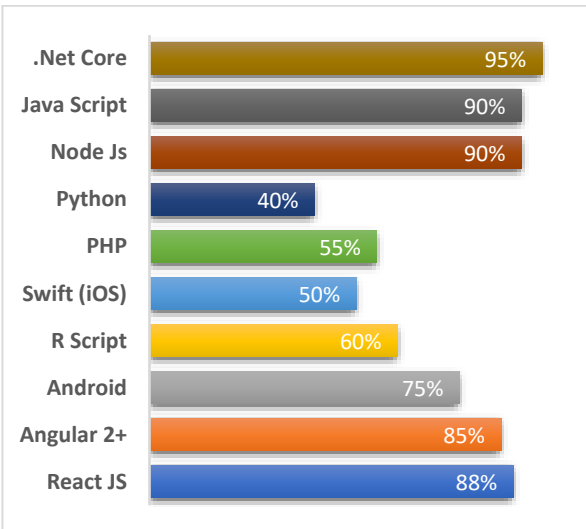


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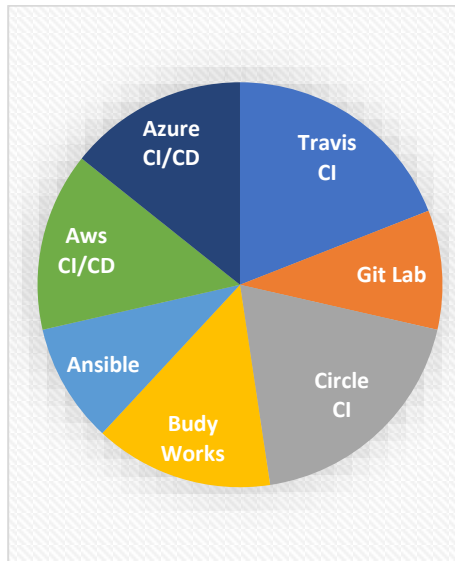


Experience: Multi skilled **Technical Cloud Architect** with 16+ years of experience in designing, developing, deploying enterprise, mid-sized, start-ups & open source applications in cloud, in-house and hybrid environments.

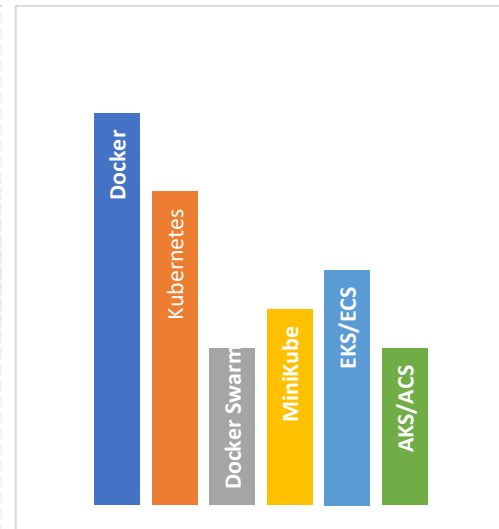
Skillset



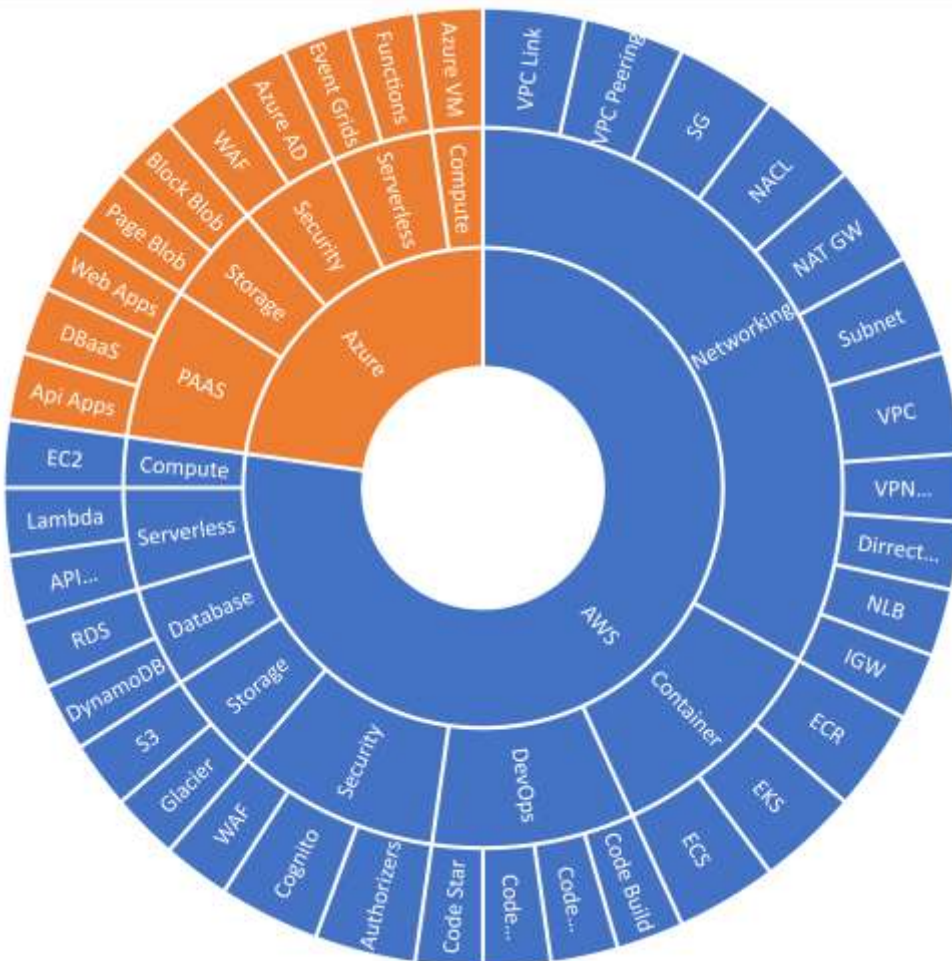
DevOps



Containers



Cloud



Technical Overview

- Designed **cloud native solution** based on Micro-services Architecture design principles and patterns. Technologies leveraged are API Gateway, Lambda, RDS, Cognito and S3.
- Fully hands-on and extreme trouble shooting skills especially in **.Net Core & JavaScript**.
- Part of a team in building AWS Environment with HIPAA **compliance**, TDE, TLS enablement with AWS services like RDS & API Gateway.
- Experience in troubleshooting using **sysinternal** tools like ProcMon, ProcExp, ProcDump, Fiddler, WireShark to debug process, thread stacks & network to troubleshoot issues.
- Performance tuning and **query optimization** for various applications.
- Strong knowledge in **Angular 2+, React JS, d3 js, knockout js** and various js libraries and framework.
- Comfortable in **mobile development** in both Android & IOS
- Deployed & managed **micro services** in both Windows, Linux and in docker based containers.
- Designed and developed **SAAS** based application with multi-tenant support
- Built a complete CI/CD pipeline using **Code Commit, Code Build, Code deploy** for the Serverless Application. Gradual Deploy as a standard for initial integration with canary 30 mins. Managed both in-place & blue/green deployment with custom AppSpec.yml hooks

Summary:

- Proven ability to contribute both individually & technically manage teams to successfully deliver high performance, highly available & secure solution of highest quality.
- Worked with **startup firms** by successfully designing, executing various projects thereby gaining good experience in handling and giving shape to **adhoc** requests.
- Created AWS foundation setup (VPC, Subnet, NACL, SGs, Subnets, Routes, NLBs, AMI, EC2) automated provisioning of resources using **Terraform** reusable modules and **Infrastructure As Code (IAC)** best practices.
- Part of a team in building AWS Environment with HIPAA compliance, TDE, TLS enablement with AWS services like RDS & API Gateway.
- Strong understanding & experience with the traditional functional, event driven & oop and the current of declarative programming and even working towards next generation Automate based programming.
- Successfully migrated many inhouse & green field applications to AWS cloud platform
- Created EKS based POC solution to orchestrate containerized micro-services using Kubernetes clusters and nodes.
- Used Step Functions and Amazon States Language (ASL) to orchestrate lambda-based service invocation and task coordination.
- Secured cloud-based application AWS WAF, Cognito, ADFS, Azure AD
- Define & enforce reference architecture for web & cloud applications.
- Experience in designing decentralized block chain application using Ethereum.
- Worked with data scientist, orchestrated and implemented the algorithms to a right deep learning approach and developed program API to give sense to all unattended domain specific audit logs.
- I have been part of technology evaluation group & managed to review, assess the implementation in the project
- Experienced in doing POC & Feasibility Study with latest technology stack and been part of various decisions.
- Played key role in moving the green field projects and even possible few legacy projects to adapt micro services architecture.

About Me:

- Passionate technologist, Self-motivated and pro-active problem solver.
- Contributed to open source and developed social conscience application help reduce food wastage.
- Quick learner, Team player & Fully Hands on and try to keep up to the current pace.

Achievements:

- Runner Up in "The Move Health Data Forward Challenge" a competition held by American MOH to develop an Api that utilizes the new UMA (User Managed Access) the implementation specifications created by the HEART Workgroup (Heart WG) with oAuth2, oidc extensions and won the cash reward.
- Released a paper explaining the html5 feature and the flexibility with hybrid approach in mobile development and readiness as a company when working with CSC.
- Automated the tenant onboarding system with versioning and stage & deploy infra, which radically reduced the deployment duration from 1 week to 6 hours.
- Received Star Performer & VP Award during my developer time in DELL.
- Reduced the licensing cost for Identity Management by enabling oAuth security for API through Cognito by federating the enterprise identity management through Cognito.

Education:

- MS.IT from Manonmaniam Sundarnar University, Tirunelveli.
- B.Sc. (Maths) from Manonmaniam Sundarnar University, Tirunelveli.

Current Focus & Area of Interest:

- As a trend goes, from the traditional functional, event driven & oop and to now the declarative programming is on high and soon the next generation Automate based programming will take over, anticipating that Currently developing an terraform script generating application. CI/CD Pipeline Experimenting with – **Buddy Works** (Since this is the one of the few .Net supported build Env). to generate IAC code and automate containerized & deployment process
 - <https://terraform.immanuel.co/>
 - Working & exploring the basic algorithm implementation and bringing visualization as a report & analysis application to use machine learning & basic algorithm to validate and examine data
 - <https://d3.immanuel.co/>
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Work Experience:

Organization	Period	Designation
Streamlined Medical Solutions / Hyderabad	Aug'2013 – Till now	Principal Architect
Computer Science Corporation (CSC) / Chennai	Sep'2012 – Aug' 2013	Principal Application Architect
Hewlett Packard / Chennai	Aug'2010 – Sep'2012	Technical Architect
Accenture India Ltd / Chennai	Dec'2009 – Aug' 2010	Team Lead
Dell International Services / Hyderabad	Oct'2006 – Nov' 2009	Senior Software Engineer
Diadem Technologies / Chennai	Jul'2005 – Oct'2006	IT Manager
HMS L.L.C / DUBAI	Aug'2003 – Jun'2005	Manager
Ram Knowledge Systems	Jan'2003 - Aug'2003	Software Programmer

Projects

DCM (Demand Capacity Management) is for a **Envision Healthcare USA**, major health provider with more than 25k physician. The objective is all about taking the historical data analyze & forecast the patient arrivals & schedule the shifts for Doctors based on the specialty. Being **Cloud Automation Architect** for this project, responsible for building ground up AWS env and recommending the appropriate AWS services. For Infrastructure VPC, Subnets, NACL, SGs, AZs, VPC LINK, NLB, IGW, NAT. Security using Cognito federated with enterprise Identity management OKTA and API Gateway secured using Cognito Authorizers. Route 53, Dynamo DB, R, AWS Sage Maker for data analysis. ML & Shift scheduling system is hosted using AWS AKS K8s clusters. The entire Infrastructure is built & deployed using terraform script. KMS, Cloud Trail, Cloud Watch & AWS WAF & Shield & sentinel agent setup for HIPAA compliance. Also VPC Peering, Transit Gateway for integrating External Systems in AWS.

Rap&GO (Rapid Admission Protocol & Gap Order) is for a **Envision Healthcare USA** is a key system in hospital medicine department in charge of handling all HL7 feed that comes in from hundreds of hospitals. The frequency of data volume at peak hours is almost 100 msgs/sec. the patient help center which was querying this volume of data to provide inputs & support to patient had become very difficult. As a **Cloud Architect**, I designed an app that all hl7 feed goes through SQS & the Cloud watch Alarm configured for any exception and alerts the support team. Also, the error is captured in Dead letter queue & then appropriate data managed in DynamoDB for support team to review & take a remedy action. The

Amalga, as a **Tech Lead** for **Microsoft USA**, this is a SAAS based Healthcare reporting system, I was responsible for a writing a quality code and built an error free system. And automate the deployment using VS Setup & Deployment to continuously build and release the application with right versioning and the client specific details & functionality based on their licenses. Fully automated the custom test cases specific to the client is managed & executed as a nightly build, and priority of assignment is made based on the contract weightage and the release cycle. Also right branching strategy was defined to manage the parallel development happening for multiple client with single codebase.

PDSS (Property Decision Support System) As a **Technical Architect** for **7-Eleven, Dallas USA**, worked on automating the Real estate negotiation process. The base calculation decision factors were captured, managed and translated to business rules. Since the 7-Eleven had nearly 40000 Propertied there based on the tenure of contract there will at least be 360 property renewals a day. So the transaction around the data feed & arithmetic behind the transaction was very high, so the performance of the code is carefully crafted. Perfmon and .net perfmon of system resources captured & alerted based on the usage.

GM3PD (GM Product Portfolio Planning Database) as a **Technical Architect** for **General Motors, Detroit, USA**, worked on migrating the existing legacy system from VB to SharePoint 2010. Developed a POC with SharePoint 2010 feasibility study and then build a design approach and reference implementation.

OFS (Order Fulfillment System) for **Dell, Limerick, Ireland**. Worked on order fulfillment system with the objective of “Order Anywhere Build Anywhere Deliver Anywhere”, when there is a major shift in the business paradigm of moving towards the retail from the traditional build to order platform. This is a complete custom rule engine which identifies the ordered item and the global ordered location and delivered location and maps the appropriate nearest build location. Translating business logic rules in c# code, applying complex xpath in runtime to take respective decision.

GOAL (Global Outbound Application Layer) for **Dell, Limerick, Ireland**, is a project designed to extract the outbound Dell process which starts from post factory activities to be segregated and automate. Logistic related information and subsequent flow required for this has been completely, the application was developed using traditional com+, and Web Method an EAI tool and IBM MQ to integrate many external shipping systems. Direct presence in Ireland & Poland for training users on application

FOOE (Fulfillment Order Orchestration Engine) for **Dell, Austin, USA**, the purpose of the project is to handle the Retail orders that come through. SOA is the major platform used to achieve the functionality of this project, and this is a complete SOA implementation using Oracle BPEL (Now OSB) and ESB managed by ALSB (Aqua logic Service Bus) also translating complicated enterprise specific business rules and procedures into appropriate business logic components with Blaze Soft. Providing maintenance UI to the business users to configure the rules created. Successful deployment of this Global application

Opensource Web Apps

Online Voice Based (IDE)

This is a voice-based Development IDE, convenient for developers to use voice commands to write major part of the code especially designed for Html, JavaScript without using keyboard. Using google speech recognition to translate the long text, and using pocketsphinx js, an Emscripten converted library to build words, grammar to detect & map the key phrases to execute the commands.

CI/CD Pipeline Built on - **GitLab**

 : <https://speech-ide.immanuel.co/>  <https://github.com/immi5556/Immanuel-Speech>



Machine Learning Web Apps & Developer Api

Language Detection (N-Gram), Profanity Checker (K-Means Clustering), YouTube Review (Sentiment Analysis)

Machine learning is nothing but applying right algorithm to classify the data either by supervised or unsupervised approach. In Language detection app user can upload, build & train their own model. So all these app can also be consumed as a api for developers & mostly for university students to take it further and explore the possibility and extend the implementation.

CI/CD Pipeline Built on – **Circle CI**

 : <https://language-detect.immanuel.co/>  https://github.com/immi5556/langauge_identify
<https://vulgarity-validator.immanuel.co/> <https://github.com/immi5556/Immanuel-Speech>



Open Source - Reusable Android Mobile Libraries

Android Camera Thumbnail, Android Browser View

Developed a reusable library & registered with jcenter repository and so available for any developers to be used directly using maven, gradle or ivy artifacts with in Android studio. The BrowserView is a complete bridge between JavaScript & native android which will expose, Camera, Gps & Device details to JavaScript.

CI/CD Pipeline: **Travis CI**

 : <https://bintray.com/browseview>  <https://github.com/immi5556/Android-BrowserView>
<https://bintray.com/camerathumb> <https://github.com/immi5556/Android-Camera>



Opensource Web Apps & Developer Api

Developer Apps

- : Geolp services: <https://geoip.immanuel.co/>
- Simply Socket: <https://socket.immanuel.co/>
- Online key value store: <https://keyvalue.immanuel.co/>

Utility Apps

- : Chat application: <https://bubble.immanuel.co/>
- YouTube downloader: <https://ydl.immanuel.co/>
- Online Video converter: <https://video-converter.immanuel.co/>

Social Cause

- : Food Wastage: <https://xsfood.org/>
- Online task tracker: <https://stopwatch.immanuel.co/>

Reference Apps

- : Dynamic Form designed using hi5:
<http://hi5.immanuel.co/Common/ScriptView>

eCommerce Platform

- : Developed a Simple responsive eCommerce platform client side developed in react js and server side runs on .Net core & PHP
 - Online Fish Store: <https://aumfish.com/v3/>
 - Online Grocery Store: <https://vload.in/v1/>

Place: Hyderabad

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Yours Truly,

J. Immanuel Raj