Dr. Prakash P
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CAREER OBJECTIVE

To conceive new concepts, and apply them in an efficient way to benefit the organization that I work for.

EDUCATIONAL QUALIFICATIONS

PhD

Specialization/University	:	Information and Communication Engineering / Anna University.
Thesis Title	:	Design of Energy Efficient Algorithms for Cloud Computing Environments.

Master of Engineering   (Aggregate –84.20%)

Year of Passing	:	2007.
Specialization	:	Computer Science and Engineering.
Institution	:	SSN College of Engineering, Kalavakkam, Chennai.
University	:	Anna University.

Bachelor of Engineering   (Aggregate –81.90%)

Year of Passing	:	2003.
Specialization	:	Computer Science and Engineering.
Institution	:	Kongu Engineering College, Perundurai.
University	:	Bharathiyar University.

Higher Secondary Course   (Aggregate –84.17%)

Year of Passing	:	1998.
Institution	:	D.J.Higher Secondary School, Gobi.
Board	:	State Board.

SSLC   (Aggregate –79.8%)

Year of Passing	:	1996.
Institution	:	S.M.Govt.HighSchool, Odathurai.
Board	:	State Board.

WORK EXPERIENCES   : 15 Years 07 months

INDUSTRY EXPERIENCES

S No	Institution	Designation	Period	Total
1	Cognizant Technology Solutions LTD, Chennai.	Programmer Analyst	01/06/2007 to 24/07/2009	26 months

TEACHING EXPERIENCES

S No	Institution	Designation	Period	Total
1	Vellore Institute of Technology, Chennai	Associate Professor	03/06/2020 to till date	17 months
2	Amrita University, Coimbatore	Assistant Professor (SG)	21/05/2013 to 30/05/2020	84 months
3	Sri Krishna College of Engineering & Technology, Coimbatore.	Assistant Professor	07/08/2009 to 20/05/2013	45 months
4	Kongu Engineering College, Perundurai, Erode.	Lecturer	06/10/2003 to 26/04/2005	19 months
5	Maharaja Engineering College, Avinashi.	Lecturer	30/06/2003 to 29/09/2003	03 months

EXPERIENCE IN RESEARCH

| Duration:

4 Years

Team Size:

1 Member | **Project: Private Cloud Setup and Design of Energy Efficient Algorithms for Cloud Computing**

Responsibilities:

➢ Analysis, Design and Implementation.

Description of the project:

The various models and their characteristics of the energy their characteristics of the energy efficient computing paradigm was investigated in depth, and based on this analysis, proposed methods intended to reduce the energy consumption by migrating the virtual machine on the cloud computing environment over the specific hosts.

It proposes the first model for defining the single virtual machine migration and dynamic virtual machine consolidation. The basic prototype for identifying the host machines which are over loaded or under loaded was designed with help of the various system calls. Once the technology evolves, there is a need of distributed model for computing resources over the internet. As an attempt to improve the model specified in the first method was balanced by applying the distributed approaches. On comparing to previous model, this method uses the threshold of the CPU usage or Median Absolute Deviation (MAD) to identify the under loaded and over loaded hosts over the cloud environment. This model also proposes the two methods for the selection of the virtual machine in which first one is based least amount of RAM that consumed by the virtual machine and the extra network bandwidth available the particular host. The allocation of a virtual machine was done by applying the Power Cognizant Best Fit Decreasing (PCBFD). The Service Level Agreement Violations (SLAV) was calculated based on the Performance Degradation due to the Migrations (PDM). |

	Private Cloud Setup and Design of Energy Efficient Algorithms for Cloud Computing (Cont'd)
Duration: 4 Years **Team Size:** 1 Member	The above mentioned methods helped to place the virtual machines in the designated host over the distributed environment. In recent days, most of the cloud users submit the request to datacenters in the cloud environment by applying exhaustive data-centric workflows which leads to the major energy consumption. This motivated us further to present the Optimised Energy Utilisation in Deployment and Forecast (OEUDF) method for data-intensive workflows in virtualized cloud systems. In this approach the virtual machines were configured based on the Optimal Data-accessing Energy Path (ODEP). After that OEUDF computed the rank of the activities which supported to schedule the workflow. Optimised energy utilisation in deployment and forecast (OEUDF) models frequently monitored the submission pool to check any unscheduled activities were present over there. The proposed method uses Directed Acyclic Graph (DAG) to represent the set of activities and the dependencies among the computing and storage nodes. The simulations were carried out over these three algorithms by considering the parameters like Central Processing Unit (CPU), Memory and the Disk storages. This method was compared with Heterogeneous Earliest Finish Time (HEFT) and Max-min Fair Dynamic Voltage and Frequency (MMF-DVFS). The proposed method consumes the energy more than 20% compared to all other methods. The above methods were simulated by using some of the cloud simulation tools. The dynamic virtual machine consolidation algorithms were implemented in the Open Stack cloud environment. The virtual machines were placed by using the modified Best Fit Decreasing (DFD) which took few additional constraints such as Central Processing Unit (CPU) usage, the Random Access Memory (RAM) size and ideal node list. The selected virtual machine's Central Processing Unit (CPU) needs and the Random Access Memory (RAM) sizes were compared with the ideal node's CPU and the Random Access Memory (RAM) sizes which are ready to place the virtual machine. The overall Quality of Service (QoS) delivered by the system was defined by Aggregate Overloaded Time Fraction (AOTF). The six different AOTF variants were evaluated with different threshold and median values. The energy consumption was reduced nearly 30% after applying the dynamic consolidation of the virtual machines over the distributed cloud environment. The experiments conducted on the proposed methods revealed the importance of these methods in efficient energy management of cloud environment at various levels, and also provided deeper knowledge of the energy conservation over the cloud environment.

PROJECT EXPERIENCES

Project #1	Project: Mercury NextGen –CCCI & ARMS
Duration: 14 Months **Team Size:** 4 Member	**Responsibilities:** ➢ Analysis, Design, Implementation, Testing. **Description of the project:** The Mercury – NextGen CCCI (Claims Call Center Initiative) Project is initiated by the client to make the First Reports application (Older version of a project) as simple as compare to the older version. This project deals whenever the insured person makes a call to the call center they can easily grab the details of an insured person who is involved in that accident. CCCI project have four different phases/modules, in that first module collects a details like who makes a call to the call center, he/she is a insured person, third party, car owner and so on.., The second module gathers information like car particulars, insured details and third party driver details and driver details. This page holds all the basic details that are going to be loaded into the NextGen System for the first time. Third module has a detail of other party driver/owner details, in which we can add any number of other parties who are involved in that accident. The last module holds the information such as car shop and ARMS reservation details. The car shop details page consists of the data like which body shop nearer to that accident, is this shop is applicable for that insured company and so on.., The ARMS(Automatic Rent-a-Car Management System) reservation is separate project which deals, whenever the insured person met with an accident he/she makes a call to the call center to book an car for his/her usage until all the legal process are getting over. This project (ARMS) is implemented by using a web service, which is invoked by Claims call center when ever customer needs a rent-a-car. The CCCI application hits the third party provider, who provides the Rent-A-Car application as service. After the completion of the entire process the details are submitted by a CCCI application and all the details are transferred to the NextGen Project, where all the process are under writing , claims and billing activities are taken place. **Technology Skills** : JSP, Java, Struts and Java Script. **Tools used** : Aqua Studio, Clear case.

Project #2	**Project: Mercury NextGen**

Duration:

12 Months

Team Size:

4 Member

Responsibilities:

➢ Analysis, Design, Implementation, Testing.

Description of the project:

The Mercury – NextGen Project is an in-house project, customized Iterative model with Rational Unified Process (RUP). The goal of the project is to rewrite the existing HP3000 based Underwriting , Underwriting and   Billing applications in J2EE platform providing a set of rich Graphical User Interface based features. Mercury – NextGen project has divided into three core modules viz. Underwriting and Policy Administration, Underwriting Processing, and Billing and Collection Systems.

The Mercury – NextGen application architecture is component based and provides flexibility for customization of business rules a business tasks based on states. The architecture also consists of various infrastructure components would be standardized across the enterprise so as to provide a J2EE development framework.

The rating process is done using Duck Creek where in developer can quickly define the rates for the current system and for future lines of business you may develop. This project uses Blaze as the rule engine which is the leading rules management technology for managing and automating business decision processes. The system allows access to the contents of the system based on the level of authorization the user been provided. The document management has been done by DMS to archive/retrieve/print the forms from the Mercury – NextGen System.

The claims module involves core business processes such as Adjuster assignment setting up an initial reserves, reserve adjustment and Loss/Expense Check Issuance.

Technology Skills : J2EE-Jsp, Struts; Java Script.

Tools used   : Aqua Studio, Clear case.

Project # 3:

Project: Protein Web Ontology

Duration:

6 Months

Team Size:

1 Member

Responsibilities:

➢ Analysis, Design, Implementation, Testing.

Description of the project:

The protein web ontology aims to develop ontology for protein structures to provide a unified access to bio-informatics resources related to protein. The basic idea is to use the existing knowledge available in the ontologies, knowledge bases and data banks such as Gene Ontology (GO), Protein Data Bank (PDB), SWISS-PORT and UniPort.

This system can be used for human bio-informatics applications such as identifying genes with the help of Gene Ontology (GO), and some ontology based information retrieval to provide extended interpretations and annotations.

Technology Skills   : J2EE.

Tools used   : Protégé

Mark up Language: XML.

Project # 4:

Project: Implementation of Multilevel Median Filters

Duration:

6 Months

Team Size:

1 Member

Responsibilities:

➢ Design, Implementation.

Description of the project:

The image is transferred from one network to another or within the network there is chance of image getting corrupted. Such an image is associated with noise. Noise in the image can be removed with the help of image filters. These noises are removed with help of this project.

Technology Skills   : C.

Project # 5: *Ongoing*	**Project: Interactive App for FLA**

Duration:

3 Months

Team Size:

3 Member

Responsibilities:

➢ Design, Implementation.

Description of the project:

This is a Formal Language and Automata Theory Learning application developed for beginners in an Interactive way.

As reading from an e-book offer nothing more than reading from a normal text book. This application aims to teach FLA concepts in an interactive way. The contents are not only for reading; it is design to give a better learning experience with the tools provided. It also has additional features for testing your knowledge, web references and settings about the application in the main page.

Technology Skills   : Java, JavaScript, Android and Ajax.

Teaching Interest

Subjects Taught

❖ Machine Learning

❖ Python and C Programming

❖ Cloud Computing + Full Stack Development

❖ Formal languages and Automata Theory

❖ Big Data Analytics – Hadoop + Spark

❖ Computer Language Engineering

Technical Qualifications

Technical Skills

Programming languages : Python, C++, Java, J2EE-Struts and C Sharp.

Big Data Analytics   : Hadoop, Pig , Spark and Hive

Web Designing Languages   : HTML, JSP and Java Script.

Database   **:** MongoDB and Oracle.

Framework & IDEs   : .NET, Microsoft Visual Studio OpenStack and RAD.

Operating Systems   : Ubuntu and Windows.

Publication Details	**International Journals and Conferences**
	Prit M Vasiyani and Prakash P, "*A Comparative Study of Students Online Learning during Pandemic Using Machine Learning Model*," Proceedings of the 4th International Conference on Communications and Cyber-Physical Engineering, Lecture Notes in Electrical Engineering-Springer, 828, 2022. https://www.springer.com/gp/book/9789811679841]
	Prakash P and Sakthivel V, "*Efficient Node Placement Approach in Fog Computing Environment Using Machine Learning Model*," Proceedings of the 4th International Conference on Communications and Cyber-Physical Engineering, Lecture Notes in Electrical Engineering-Springer, 828, 2022 https://www.springer.com/gp/book/9789811679841
	T.Deepika , Prakash P and Dhanya NM , *"Efficient Resource Prediction Model for Small and Medium Scale Cloud Data Centers",* Journal of Intelligent & Fuzzy Systems, vol. Pre-press, no. Pre-press, pp. 1-17, August 2020. [DOI: 10.3233/JIFS-200653]
Journal and Conference Papers	A. Ravi, N. Kailashnath and P. Prakash, "Enhancing Biomedical Sensing in Ambulances using Neural Networks and Internet of Things," *2020 Fourth International Conference on Computing Methodologies and Communication (ICCMC)*, India, 2020, pp. 43-48
	Kartik.P.V.S.M.S, Konjeti B V N S Sumanth, and Sri Ram V N V and Prakash P**,** *"Sign Language to Text Conversion Using Deep Learning"*, Proceedings of the 4th International Conference on Inventive Communication and Computational Technologies (ICICCT 2020), Lecture Notes in Networks and Systems(LNNS), Springer. [Accepted]
	T.Deepika and Prakash P, *"Power Consumption Prediction in Cloud Data Center using Machine Learning"*, International Journal of Electrical and Computer Engineering, vol. 10, no. 2, pp. 1524-1532, 2020.

Prakash P, Suresh, R., and Kumar, P. N. Dhinesh, *"Smart City Video Surveillance using Fog Computing"*, International Journal of Enterprise Network Management,Volume , vol. 10, no. 3/4, 2019.

R. Suresh and Prakash P, *"Deep Learning based Image Classification on Amazon Web Service"*, Journal of Advanced Research in Dynamical and Control Systems, vol. 10, pp. 1000-1003, 2018.

P. D. Bharathi, P. Prakash and M. V. K. Kiran, *"Energy efficient strategy for task allocation and VM placement in cloud environment"*, *Published in IEEE International Conference on Innovations in Power and Advanced Computing Technologies [i-PACT20l7]*, pp. 21-22, April 2017.

Prakash P, Darshaun, K. G., Yaazhlene, P., Ganesh, M. V., and Vasudha, B., *"Fog Computing: Issues, Challenges and Future Directions"*, International Journal of Electrical and Computer Engineering, vol. 7, pp. 3669-3673, 2017.

S. Arun, Chandrasekaran, A., and Prakash P, *"CSIS: Cloud service identification system"*, International Journal of Electrical and Computer Engineering, vol. 7, no. 1, pp. 513-520, 2017.

P. D. Bharathi, P. Prakash and M. V. K. Kiran, *"Virtual machine placement strategies in cloud computing"*, *Published in IEEE International Conference on Innovations in Power and Advanced Computing Technologies [i-PACT20l7]*, pp. 21-22, April 2017.

A. Kumar, Sathasivam, C., and Prakash P, *"Virtual machine placement in cloud computing Environment"*, Indian Journal of Science and Technology, vol. 9, no. 29, 2016.

Prakash P, Kousalya, G., Shriram K Vasudevan, and Sangeetha, K. S., *"Green Algorithm for Virtualized Cloud Systems to Optimize the Energy Consumption"*, Advances in Intelligent Systems and Computing (AISC Springer), vol. 324. Springer, pp. 701–707, 2015.

K. S. Sangeetha and Prakash P, *"Big data and cloud: a survey"*, Advances in Intelligent Systems and Computing (AISC Springer), vol. 325. pp. 773-778, 2015.

Prakash P, Kousalya, G, and Rangaraju, K. K., "*Hardware Based Distributive Power Migration and Management Algorithm for Cloud Environment",* In Proceedings of The 8th FTRA International Conference on Multimedia and Ubiquitous Engineering (MUE 2014), Lecture Notes in Electrical Engineering (LNEE), vol. 308. Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 83–89, 2014.K. Kaaviyan., S., Deepak., and Prakash P*, "A Study on Security Issues in Cloud Computing", in Advances in Intelligent Systems and Computing (AISC Springer), vol. 398, 2016, pp. 167-175.*

Awards , Competition Participations and Honours	**Awards & Honours**

- ➢ Received a grant of "**5000USD from Microsoft Azure for research** "promotion.

- ➢ Won first prize **"Solve-a-thon"** @ **CII Teachers Day Celebration, 2018.**

- ➢ Received **"Excellence in Research"** from Amrita University.

- ➢ **"Distinguished Facilitator Award (Technical) – Inspire"** Faculty award by **Infosys** technologies Bangalore 2015.

- ➢ **"Distinguished Facilitator Award (Technical) – Inspire"** Faculty award by **Infosys** technologies Bangalore 2013.

- ➢ Received **"*Star of the Month"*** award, from **Cognizant Technology Solutions** for the month of April 2009.

- ➢ Received **"*Star of the Month"*** award, from **Cognizant Technology Solutions** for the month of November 2008.

- ➢ Received **"*Silver Medal*"**, from **SSN College of engineering** as recognition for securing second rank in ME (CSE).

- ➢ Participated in the **CII Teachers Day Celebration - "Case Writing & Presentation Contest",** on 30th August 2014 @ at DJ Academy for the Managerial Excellence.

- ➢ Participated in the **CII Teachers Day Celebration - "Case Writing & Presentation Contest"** 2013 @ Krishnammal College for Women.

Co-Curricular Activities	**Co Ordination and Team Work**
	➢ **BTech Project Coordinator from 2013 onwards** at Amrita University, Coimbatore.
	➢ **Class Chair for the BTech 2013** Batch at Amrita University, Coimbatore from 2014 onwards.
	➢ *ANOKA 2016*, CSE Department **over all Co-Ordinator** @ Amrita Vishwa Vidyapeetham.
	➢ **GOKULASTAMI 2015,** CSE Department **over all Co-Ordinator** @ Amrita Vishwa Vidyapeetham.
	➢ *ANOKA 2015*, CSE Department **Android Workshop Incharge** at Amrita University, Coimbatore.
	➢ **TEDx Co-Ordinator** @ Amrita University, Coimbatore - *ANOKA 2014*,
	➢ **GOKULASTAMI 2013,** CSE Department One of the **Float Manager** @ Amrita Vishwa Vidyapeetham.

Invited Talks & Conferences/ Workshop attended	**Guest lecture(s) and Extra Activities**

> Delivered a guest lecture at Sona College of Technology, Salem on 23rd October 2013 on "**Undecidability and complexity Problems**".

> Delivered a technical talk at Info Institute of Technology, Coimbatore on 14th September 2013 on "**Cloud Resource Management Concepts".**

> Technical talk on **"Cloud Simulation Tools"** at Karpagam University on 1st March 2014.

> Delivered a guest lecture on "**Algorithms**" at Karpagam College of Engineering and Technology on 15th July 2014.

> Technical Talk on "**Cloud Computing "at** STC College Pollachi on 28th August 2014.

> Guest Lecture on "**CloudSIM Packages for Cloud Computing**" at Sri Krishna College of Engineering and Technology on 19th September 2014.

> Delivered a guest lecture at Sona College of Technology, Salem on 11th October 2014 on "**Computational Theory**"**.**

> Technical talk at SNS College of Technology, Coimbatore on 25th March 2015 on **"Web Technology".**

> Delivered a technical talk at Karpagam University, Coimbatore on 05th September 2016 on "**Hadoop: Easy way to do Big Data Analytics".**

> Participated in Two Week *ISTE Workshop on **Effective Learning of Computer Programming*** conducted by IIT, Bombay.

> Attended Two Day Workshop on **"Introduction to Research Methods"** held at Sri Krishna College of Engineering and Technology, Coimbatore.

> Participated in **"National Workshop on Cloud Computing"** held at CDAC Bangalore on 21st May 2011.

> Participated in Two Week *ISTE Workshop on **Database Management Systems*** conducted by IIT, Bombay.

> Attended a *workshop on Cloud Computing* conducted by PSG College of Engineering and Technology Coimbatore.

> Received **Rational Application Developer for WebSphere Software 6.0** certification for web development and testing from **IBM**.

Funding Details	**Funding Details**
	➢ Rs 4,90,000/- received from **CISCO** for the development of **"Identify & build a Replacement platform for Cordys Process System** ", during the year 2016-17
	➢ Indian Council of Social Science Research (**ICSSR**) granted a Rs 1,00,000/- for the project titled as **"A study on the utilization of student welfare schemes offered by Government of Tamilnadu in Coimbatore district"**
	➢ USD 5000 received from **Microsoft Research** award to explore the Azure cloud components

PERSONAL INFORMATION

NAME   **: PRAKASH P**

FATHER'S NAME   : Mr. N.Periyasamy

D.O.B   : 15 July1981

SEX   : Male

MARITAL STATUS   : Married

NATIONALITY   : Indian

RELIGION   : Hindu

LANGUAGES KNOWN   : English, Tamil

DECLARATION

I hereby declare that the information furnished above is true to the best of my knowledge.

Prakash P