PURVI DESAI

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EDUCATION

PUNE INSTITUTE OF COMPUTER TECHNOLOGY, PUNE, INDIA — ***2008 – 2012***
***B.E.*, Computer Engineering**
CGPA: 3.90/4.00 · *3rd* in Computer Department of PICT

FERGUSSON COLLEGE, PUNE, INDIA — ***2006 – 2008***
***Junior College,* Science**
First Class with Distinction

RESEARCH INTERESTS

Design and construct *efficient and self-aware* systems; Systems Design and Architecture, Human-Computer Interaction, Intelligent Information Systems, Ubiquitous Computing, Machine Learning.

WORK EXPERIENCE

Marvell Semiconductor, Santa Clara — ***2012 - Present***
Software Engineer, Smart Energy Platform R&D

Amdocs Innovation Lab, Pune, India — ***2010 - 2011***
Intern , Operation Support Systems (OSS)

PUBLICATIONS

Madrid, Spain Fiesta: Parallelism for Data Collection and Intelligent Inference in a Distributed Heterogeneous Environment[1] — ***2011***
Purvi Desai, Akanksha Panse, Manali Jadhav, Ashwini Gavhane, Aniruddha Patwardhan
Computer Modeling and Simulation (EMS), 2011 Fifth UKSim European Symposium

PROJECTS

Serial-to-Wifi (*Marvell Semiconductor*)
Designed and implemented a customer project to provide WLAN connectivity to other modules over a serial interface using Marvell's Wireless Microcontroller. Developed S*mart Washing Machine* and *Smart Fridge* PoCs for customers to help them make their serial hosts internet aware using *Serial-to-Wifi*.

Smart Home PoC *(Marvell Semiconductor)*
Gathered sensory data using Marvell's Wireless Microcontroller. Developed a Power switch and PIR sensor ecosystem to allow motion triggered as well as wireless control of fans/lights using service discovery protocols. Developed a mechanism to control massagers/actuators of a mattress over WiFi using *Serial-to-Wifi*. Held demonstrations at an IEEE conference on *Internet of Things* in San Francisco, 2013.

Marvell Wireless Microcontroller HTTP Client module *(Marvell Semiconductor)*
Implemented support for HTTP Client on Marvell's Wireless Microcontroller for communication with any HTTP server.

Marvell Wireless Microcontroller UART, SSP and I2C drivers *(Marvell Semiconductor)*
Implemented Direct Memory Transfer (DMA) support for efficient data transfer using UART, SSP and I2C communication protocols.

Marvell Wireless Microcontroller OS and Network Stack Refactoring *(Marvell Semiconductor)*
Refactored modules in LWIP network stack and FreeRTOS to improve overall performance and footprint.

Event-Driven Synchronization for Efficient Network Inventory Discovery (*Amdocs Innovation Lab R&D – Internship Project*)
A typical brute force network inventory discovery algorithm would frequently poll the underlying systems and network elements causing a tremendous amount of network traffic with little return on polling efforts. This project involved studying Cisco routers and adding intelligence at router level to enable them tell the discovery engine about a topology change. This would reduce the network traffic hundred or even thousand fold leading to highly scalable auto discovery in a large network.

A Distributed Social Platform for E-Commerce (*Senior Year Undergraduate Project*)
Designed and implemented a project to provide a unified platform with on-demand pluggable modules having e-commerce focus and integration of Facebook + ecommerce data to provide a platform for social commerce. This platform was aimed at raising online sales using social graph technology and also making it a personalized customer experience. This project led to a paper publication[1].

[1] http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6131223&isnumber=6131184

Next Generation Network and IP Multimedia Subsystem *(Junior Year Engineering Seminar)*
This seminar was based on a study of the evolving generations in networks (NGN), current trends and a core component i.e. IMS to make a transition to an all-IP network in the near future.

TECHNICAL SKILLS

PROGRAMMING LANGUAGES:
C, C++, PYTHON, PERL, JQUERY, JAVASCRIPT/HTML, ASSEMBLY

CONCEPTS/TECHNOLOGIES:

- ARM and Cortex M3/M4 Architecture, Cortex M3 SOC Peripherals Programming in C, Cortex Exception handling and NVIC, FreeRTOS, UART, SPI and I2C drivers, mDNS service discovery, HTTP(S), WebSockets, LWIP Network Stack, Power-Management Framework, WLAN 802.11 WiFi Fundamentals, GNU Tool Chain, OpenOCD, Git Version Control
- NET-SNMP, SNMP manager and agent Cisco MIBs, DISMAN-MIB, ENTITY-MIB, IF-MIB, MySQL
- Pylons, RabbitMQ, MongoDB, Facebook Developers, Celery

RELEVANT COURSEWORK

PUNE INSTITUTE OF COMPUTER TECHNOLOGY
Data Structures and Algorithms, Design and Analysis of Algorithms, Data Mining, Computer Architecture, Discrete Structures, Operating Systems, Microcontroller and Microprocessor Architectures, Design and Analysis of Computer Networks, Theory of Computation, Digital Electronics Logic and Design

FERGUSSON COLLEGE
Mathematics (Advanced Calculus, Trigonometry, Co-ordinate Geometry, Probability and Statistics), Physics, Chemistry, Biology (Zoology + Botany)

AWARDS

Amdocs *Young ProdiG* Title for the most innovative project in Amdocs Innovation Lab ***2011***

1st prize at Cummins Inter-college Techfest, *3rd prize* at BVP Inter-college Techfest for Senior Year Project ***2012***

Award of Recognition for Exceptional Contributions to a customer project at Marvell, rating of '*exceeds expectations*' in 1st performance review ***2013***