Mehul Prajapati
Embedded Linux Developer
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Education

- **Dharmsinh Desai University** GPA: 3.3/4
  B.E. Electronics and Communication *2008 - 2012*

Work Experience (3.11 years)

- **Upwork** *Freelancer, September 2016 - present*
  - Working on web development projects. (Python, Django, OpenCV)
- **Mobile Internet India Pvt Ltd.** *Embedded Engineer, April 2016 - present*
  - Working in a Protocol Stack Development team. (Python, C, TCP/IP Networking)
- **Volansys Technologies Pvt Ltd.** *Embedded Software Engineer, October 2014 - July 2015*
  - Contributed in Board bring up activity. (C, Board Support Package)
- **eInfochips Pvt Ltd.** *Embedded Software Engineer, January 2014 - October 2014*
  - Worked on Linux kernel porting and customization. (C, Firmware)
- **Matrix Comsec Pvt Ltd.** *Software Developer, August 2012 - January 2014*
  - Upgrading Telecom products with new features as per requirements. (C, Makefile, IPC)

Technical Skills

- **Programming Languages:** C, HTML, CSS, JavaScript, XML, LaTeX
- **Scripting Languages:** Linux Bash Shell, Python, Selenium Webdriver, Tcl-Tk
- **Database:** SQLite, MySQL
- **Frameworks/Libraries:** Django, OpenCV, NumPy, SciPy, Scikit-Learn, Pandas
- **OS:** Linux (Ubuntu), Windows
- **Linux Programming:** Multithreading, IPC, TCP/IP Socket Programming, Cross building, Makefile
- **Version Control Systems:** git, svn
- **Bus Protocols:** SPI, I2C, CAN, UART
- **Network Protocols:** HTTP, TCP, UDP, FTP, Radius, Syslog, SNMP
- **Development boards:** Raspberry Pi, Beaglebone Black, TM4C123, Intel Galileo, NodeMCU ESP8266
- **Software Tools:** Eclipse CDT, Keil μVision 4, Visual Studio Code, vim, gdb, Octave, MATLAB

Organizational Skills

- **Analytical Skills:** Developed during my employment when I was responsible for product feature feasibility.
- **Teamwork and Task Estimation:** Skills acquired at university by doing curriculum projects in small teams.

Other Skills

- **Swimming, Chess:** Active member of sports club
- **Puzzle Solving, Competitive Programming:** Practicing as an independent

Achievements & Awards

- Got National Merit Scholarship from government of India for achieving excellent grades during under-graduation.
- Student Appreciation Award, Torrent Power Ltd.

Volunteer

- **Stanford Scholar Program** *Participant, Feb 2017 - present*
  - Making research paper accessible to non-researchers.
- **Python Express** *Mentor, Sept 2016 - present*
  - Guiding university students to get a kickstart into the world of Python.
- **Mozilla** *Firefox Student Ambassador, July 2016 - present*
  - Actively participating in mozilla community meetups and events.

Courses

- **edx:** Embedded Systems, Applied Machine Learning, Programming with Python for Data Science, Introduction to Computer Science
- **Coursera:** Machine Learning, Introduction to Web Development, Learn to Program: The Fundamentals
- **Goethe Zentrum:** German language (Level - A2)

Professional Projects

- **Embedded SMS Server**

  A customer had requested a feature in the Matrix IP-PBX products to convert the SMS to Email and Email to SMS. The project involved adding the required features by following SMTP and POP3 protocols. (C, IPC, Makefile)

  - Development of SMS PDU Encoding and Decoding module by following GSM 3.40 standard.
  - Development of SMS sender, SMS receiver and SMS delivery modules to handle all SMS related activity on the system by leveraging finite state machine algorithm.
  - Development of algorithm that handles multi part SMS in SMS Receiver module.
  - Development of System timer, syslog and message queue software modules.
  - Development of bash shell scripts and Makefiles to cross compile software modules.
  - Development of Unicode character encoder and decoder using libiconv open source library.
  - Software Design and QA release documentation.

- **Real time IP data traffic accounting**

  Accounting IP data consumption of users and showing its real time graph on web application. (C, MySQL, TCP/IP Networking, PMacct)

  - Customization of promiscuous mode accounting(PMacct) utility on RHEL7.2 server.
  - Development of Radius protocol dissection module for authenticating users.
  - Integrating Radius decoder module into PMacct.

- **Thin client on ARMv7 based development board**

  - Porting of Ubuntu 12.04 file system and board support package on Marvell PXA2128 SoC based development board.
  - Implementation of hot plug HDMI event by using udev rules.

- **Analyze marine sensors data over the internet (IoT)**

  Fetching marine sensors data from CAN bus and sending it over the internet. (C, Linux kernel, SQLite, CAN boat)

  - Board Bring up of TI AM335x Cortex-A8 industrial application based development board.
  - Porting customized Linux Kernel 3.2 on TI AM335x Cortex-A8 based development board.
  - Development of SQLite wrapper utility which manages data in SQLite database.
  - Setting up CAN Boat utility which fetches NMEA2000 compliant marine sensor data from CAN bus, decodes it and sends it over TCP/IP network for analysis.

- **Computer Telephony Integration**

  This project involves the development of TSP (Telephony service provider) driver for Matrix IP-PBX products. (C, Socket programming)

  - Development of TCP socket client application which sends proprietary protocol data.
  - Development of Windows Registry module which would add/modify the configuration of any software installed in the windows system.
  - Development of CTI wireshark dissector which decodes proprietary protocol data for analysis.

- **Porting OpenCV based Java application into Intel Galileo board**

  Deploying and running Parking space application. (OpenCV, Cross-compiling)

  - Booting Galileo gen 2 board with latest iot dev kit image present on sd card.
  - Deploying Oracle Java jdk into the board.
  - Running OpenCV parking space detection Java application with USB camera attached on board.