**SUNNYKUMAR HIRPARA**

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**Objective:** An Engineer with Master’s degree in Electrical and Computer Engineering focused on RF & Microwave. Hands-on experience with Drive testing and walk testing with solid understanding in RF engineering and willing to learn in the field of DAS commissioning, system performance, optimization and design.

**Education:**

**Master of Science – Electrical Engineering with major in RF & Microwave May 2017**

California State University, Northridge

**Bachelor of Engineering in Instrumentation & Control June 2015**

Sarvajanik College of Engineering & Technology, Surat, India

**RELEVANT COURSEWORK:** Advance Microwave Circuit Design, RF Electronics Design, Active Microwave Circuit Design, Electrical Network Theory, Fuzzy Logic Control, Digital Signal Processing, Fiber Optic Communications, Image Processing

**Work Experience:**

**Associate RF Network Engineer at MobileNet Services Inc, Irvine, CA Nov 2018 - Present**

* Perform system tests using scanners, spectrum analyzers, transmitters, and other electronic test equipment.
* Plan, coordinate and oversee walk testing including Continuous Wave (CW) and benchmarking in shopping malls, casinos, sky scrapers, Hospitals and outdoors all over USA for Commscope, Connectivity Wireless, Crown Castle & Extenet Systems using Seehawk, TEMS Investigation Rhode & Schwarz.
* Familiar with in-building design requirements for coverage and capacity. Drive designs for capacity intensive venues using multiple antenna locations within limited space while managing interference/overlap (prediction/CW testing) for increased capacity output
* FD-MIMO (Full Dimension - Multiple Input Multiple Output) testing, collection of data and conversion using QXDM, QPST and QCAT tool.
* Software used - Seahawk, TEMS Investigation, MapInfo, and Street Atlas
* Equipment used - PCTEL MX, EX, IBFlex Scanner, Spectrum Analyzer(JDSU and Anritsu), and Yellow Frog Power Meter

**Electrical Test Engineer at Electrical Expeditors Inc, Waukesha, WI Jan 2018 - Nov -2018**

* Design of various circuits using MATLAB/Cadence and test them using the simulation tools.
* Create test plans for various RF assemblies and execute the plans accordingly.
* Create detailed reports and documents of electrical assembly products for the customer requirements.
* R&D of various RF equipment and sensors.

**RF Field Engineer at Airtel Tower LLC, Detroit, MI Nov 2017 – Jan 2018**

* Analyzed and Measured LTE parameters like RSRP, RSSI, RSRQ, SINR and CQI Measurement.
* Performed drive testing using JDSU, TEMS.

**Certifications:**

**Cisco Certified Network Associate (Cisco ID: CSCO13198095) July 2017- July 2020**

**Technical Skills:**

**Programming Languages & Databases** - C, C++, Java, Python(beginner),SQL, MySQL

**Software Tools -** MATLAB, Cadence Virtuoso, ADS, AWR Microwave Office, NetBeans IDE

**RF Equipment -** Signal generator, Oscilloscope, Spectrum Analyzer, Network Analyzer, Power meter

**Wireless technologies –** Cellular, Wi-Fi, Bluetooth, GPS, NFC,GSM, EDGE, WCDMA, LTE

**Academic Projects:**

**Class-A Power Amplifier Design April 2017**

* Designed a class-A power amplifier in a 50Ω system with maximum output power at 3 Ghz with given large signal S-parameters using GaAs Field Effect Transistor
* Checked transistor stability and conjugately matched input and output networks with P1dB=30dBm and ±0.5dB error in design
* Class-A power amplifier designed with maximum output power using Smith chart and ADS.

**Two-stage Low-noise Amplifier Design April 2017**

* Designed a two-stage LNA for minimum possible noise at 5 GHz with given S-parameters and using transmission lines for matching network
* Calculated the total amplifier noise figure and the total amplifier transducer gain at given Fmin=2dB, Γopt=0.65∠60° and Rn=25Ω using smith chart and ADS
* Thus, designed a two-stage LNA with minimum noise and maximum transducer gain at 5 GHz in a 50Ω system

**Broadband Amplifier Design April 2016**

* Designed a wideband amplifier using compensated impedance transformation technique
* The transistor used was HXTR 3101 bipolar junction transistor; silicon NPN RF transistor
* Thus, designed a broadband amplifier with a transducer gain GT = 10 (10 dB) under the condition of bandwidth from 2GHz to 4GHz

**Band-pass Filter Design April 2016**

* Designed a bandpass filter with bandwidth of 1 GHz using Microwave Office
* Bandpass filter was constructed using discrete components and were tested using a Network Analyzer
* Thus, designed a bandpass filter with Insertion loss of 0 dB, Reflection loss of 16 dB and Efficiency of 79%

**Diagnosis of Tuberculosis using Fuzzy Logic & Image Processing August 2016**

* The project consists of a diagnosis system based on fuzzy logic to determine the level of sickness of a TB patient and also to determine the disease with symptoms as inputs in MATLAB.
* Designed a GUI in NetBeans IDE for more user-friendly experience and allowing the users to determine their healthiness in terms of tuberculosis diagnosis.
* Also, using MATLAB we took X-ray images of lungs with inflammation and determined the level of severity of the disease using image processing tool. The inflammation will determine whether the patient is having mild or serious condition.

**Movie Suggestion Engine by Fuzzy Logic August 2016**

* The project proposes an approach for searching and sorting movie list according to user preference. The system maintains a fuzzy database to store movies and reviews with specific parameters for each item
* System allows the user to specify their taste in movie that are of their interest and few other defined parameters as searching keyword.
* Also, a Graphical User Interface (GUI) in NetBeans IDE 8.2 is built for more flexibility and to get the required output