

BHONAGIRI RAVIKIRAN

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MACHINE LEARNING PROJECTS

- Developed chatbot for business usecase to make the tools interactive and help clients using **chatterbot** framework.
- Developing Recommendation system for the tool suite to help users for proper interaction and prevent blockages in the flow.
- Developed **Deep Neural Networks for sequence to sequence models** , which formed basis for neural machine translation model for my internship project.
- Developed **Deep Convolutional Networks** for image classification problems.
- Developed various machine learning pipelines for various datasets as part of my course curriculum at IIT Kharagpur.
- Developed many Deep Neural Networks spanning **CNN, RNN, LSTMs** as part of my course TensorFlow specialization.
- Presently taking courses on **Google and Amazon cloud platforms** for **deploying machine learning models on respective clouds platforms** and develop API's to use provide **ML model as a service**.

WORKING EXPERIENCE

- **Senior Engineer I Timing and Power Products(TPP) team and Machine Learning Applications in Microchip** Jan 2017 to present
 - Developing Recommendation system for the tool suite to help users for proper interaction and prevent blockages in the flow.
 - Developed chatbot for business usecase to make the tools interactive and help clients.
 - Developed key features in **SmartTime, SmartTime Constraints Editor** and **SmartPower** as per request from customers and internal requirements under **Libero** suite.
 - Responsible for sustaining tools **SmartTime, smartTime Constraint Editor** and **SmartPower** .
 - Developed scripts to Automate domain data validation.
 - Undertook various roles in the team to understand the problems and coming up with a Automation solution.
- **Engineer I in Client: Qualcomm, Cisma Consultants** Mar 2014 to Dec 2016
 - Developed and supported Web applications in **WEBIX Java Script based framework** which involves representing data in web portal.
 - Developed **QHEAT (Qualcomm Hardware Event Automation tool)** Java RCP application Which facilitates Designers to enter data and perform data validation against RTL in Java.
 - Developed Plugins in Windows Excel to standardize the templates so that users under different Domains can capture the data in a specified format and generate internal format files.
 - Developed Perl based regression system for the company product.
- **Associate Hardware Engineer in IBM-ISL** July 2013—March 2014.
 - Developed the C++ code for **Gate Level Spice Modelling (GLSM)** module.
 - Worked with **Einstimer** the timing tool of IBM.
 - Performed Analysis of developed modules to check the performance improvement.
 - Successfully handled client issues with the tool, updating the code time to time.

SOFTWARE SKILLS

- Programming experience in **C++, Python, Java, Perl** Languages **Data Structures and Algorithms**.
- Programming experience in Python Libraries **Tensorflow, Keras, Scikit-Learn, Numpy, Pandas**
- Programming experience in Python data visualizations libraries **Seaborn, Matplotlib**
- Programming experience in Python frameworks **Flask, Django** .

EDUCATIONAL QUALIFICATIONS

Degree/Examination	Period	Board/University	Percentage/CGPA
M.Tech. in Electrical Engineering (Specialization: Signal Processing, Communication and networks)	2011-2013	Indian Institute of Technology Kanpur, Kanpur	8/10
B.Tech. in Electronics and Communications Engineering	2007-2011	MVSR Engineering College, Hyderabad	78.9%
Intermediate (+2)	2005-2007	Narayana Junior College, Hyderabad (Andhra Pradesh State Board)	93.3%
SSC (10th)	2004-2005	Krishnaveni Talent School, Nalgonda (Andhra Pradesh State Board)	88.8%

AREAS OF INTEREST

- Machine Learning and Artificial Intelligence.
- Software development and Firmware Development.
- Image Processing and Video Processing
- Wireless communications and Networking.
- Cognitive Radio and Wireless Communications.

SCHOLASTIC ACHIEVEMENTS

- Secured an **All India Rank 614** in GATE 2010.
- Secured **99.41** percentile in ALL INDIA GATE 2010.
- Secured **7th Highest Mark** in state in my Intermediate 1st Year 2005–2006.

M.TECH THESIS

OFDM based out-of-band dedicated common control channel design for cognitive radio network

July 2012—July 2013 Supervisor: Dr.Pradeep Sircar & Dr.Adrish Banerjee

Platform:MATLAB

- Based on the parameters of the subcarriers like the number of the subcarriers, transmit power, CR transmission range and given the constraints OFDM, the total interference caused to PU is calculated.
- This stage deals with the sub-carrier activation within the guard bands based on the PU pattern studied by CR users. Methods like Heuristic, Suboptimal and Powerloading has been proposed to activate the subcarriers.

B.E. PROJECT

Analysis and Comparison On Full-adder Block in Submicron Technology

January 2011—May 2011

Supervisor: Dr. Kanaka Durga

Platform:MICROWIND & Dsch Tools

- Analyzed various traits of Microelectronics circuits Low power, minimum geometry size, least possible consumption of delay, and flexibility of different logic styles.
- The logic styles namely conventional adder circuit, Mirror, CPL, Transmission Gate were analysed.
- Several aspects of the CMOS circuit design have been described and computed.

PROJECTS PURSUED

Language Identification

Sep 2019 – Oct 2019

Supervisor: Dr.Hemanth Mishra Swiggy

Platform:Python

- Language identification focuses on tasks like detecting and identifying the usage of multiple languages.
- I have considered code mixed English Telugu languages for my project.
- Developed two feature functions which capture the features of the input words.
- Used **Sklearn-crfsuite** and **pycrfsuite** packages for developing the classifier models.
- Developed **100K lines of corpus for English Telugu code switched language**.
- Performed various statistical analysis for code switching the words from Telugu to English language to another.

Video Key Frame Extraction Based on Spatial-temporal Color Distribution

March 2012 – April 2012

Supervisor: Dr. Sumana Gupta

Platform: MATLAB

- Implemented a video keyframe extraction method based on spatial-temporal color distribution.
- Keyframes are chosen to achieve high compression ratio and high fidelity.

Network Discovery

October 2011 – November 2011

Supervisor: Dr. Y.N.Singh & A.Roy

Platform: Solarwinds, WireShark

- Maintained an inventory and repository of topological information stored in a particular node which could then be used by a tool to either make or prevent an attack on the network.
- Analyzed the problem in perspective of both Hacker and a Network security administrator.

INTERNSHIPS AND COURSES

- Completed **Foundation degree, Artificial Intelligence and Machine Learning** at **Center for Artificial Intelligence, IIT Kharagpur**
- Completed **Tensorflow** course specialization in **Coursera**
- Visited **RCI** in Hyderabad as a part of Industrial visit in B.E .
- Lecture series on “**Optimization in 4G Wireless Networks**” by Dr. Aditya K. Jagannatham
- “**Cognitive Radio – The Next Frontier in Wireless Communications**” organized by Department of Electrical Engineering, IITK and BSNL-IITK Telecom Center of Excellence (Oct. 20-22, 2011)

CERTIFICATIONS AND OTHER QUALIFICATIONS

- **Certified Information Specialist** workshop conducted by CyberCure Solutions (26,27 Sep. 2011)
- “**Cognitive Radio – The Next Frontier in Wireless Communications**” organized by Department of Electrical Engineering, IITK and BSNL-IITK Telecom Center of Excellence (Oct. 20-22, 2011)
- Lecture series on “**Optimization in 4G Wireless Networks**” by Dr. Aditya K. Jagannatham

WORKSHOPS ATTENDED

- **Certified Information Specialist** workshop conducted by CyberCure Solutions (26,27 Sep. 2011)
- “**Cognitive Radio – The Next Frontier in Wireless Communications**” organized by Department of Electrical Engineering, IITK and BSNL-IITK Telecom Center of Excellence (Oct. 20-22, 2011)
- Lecture series on “**Optimization in 4G Wireless Networks**” by Dr. Aditya K. Jagannatham
- Attended **Mobi-Boticks** Workshop conducted by Robosapiens India and Emanaginer at MVSR Engineering College (6,7 March 2010).

POSITIONS OF RESPONSIBILITY

- **Orientation Team Member** of Counselling Service Team, IIT Kanpur, during 2012–13.
- Member of **Reading Room committee** Hall of Residence–4, IIT Kanpur. (January 2012 – July 2013).
- Organised the **MID TOWN MADNESS** event in Techfest Samavarthan 2010, MVSR Engineering College.
- Achieved **Best Organizer** award for my active participation in AECES club, MVSR Engineering college.

INTERESTS

- Photography.
- Exploring my motherland.
- Playing Cricket, Badminton, Swimming.