



Shailesh Prabhu

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WORK EXPERIENCE

Senior Project Engineer

Wipro Technologies [21/08/2017 – Current]

City: Bangalore

Country: India

- Worked extensively in Optical Wireless Communications [Li-Fi and Optical Camera Communication] and served as a technical lead to develop multiple 5G solutions.
- Developed Multi-User, Multi-Carrier and Multi-Dimensional 4x4 MIMO system for Optical Camera Communications (OCC). This solution was showcased at the **Mobile World Congress 2019, Barcelona, Spain**.
- Developed an innovative method for mitigating interference due to the overlapping lights from multiple access points in Optical Wireless Communication Systems.
- Worked on V2X use case in collaboration with **Indian Institute of Science (IISc), Bangalore** to develop a packet loss prevention solution during handovers. Also implemented Smart Handover Point detection using Machine Learning techniques.
- Developed a computationally efficient Intelligent Traffic Management application for Smart Cities Management, using Machine Learning algorithms. This solution was showcased at **India Mobile Congress 2019, Delhi, India**.
- As a technical lead of the 5G solution development team, developed various solutions like Remote Classroom, Cognitive Network Automation and Real-time Network Analytics.
- Developed a Seamless Mobility Management function with session capture for multiple Li-Fi Access Points and also vertical handover to Wi-Fi Access Points. This solution was demonstrated at the Innovation Centre in Wipro Bangalore campus to many customers/visitors.
- Built a Full Duplex Optical Camera Communication System with a peak data rate of 60kbps. Also developed a novel encoding scheme for increased system throughput.
- Developed novel adaptive mechanisms for improving efficiency of the OCC system at varying channel conditions.

EDUCATION AND TRAINING

Bachelor of Technology

Manipal Institute of Technology, Manipal [01/08/2013 – 20/07/2017]

Field(s) of study: Electronics and Communication Engineering

Final grade : CGPA 8.78/10

Thesis: Policy conflict detection and resolution in OpenvSwitch.

- Gained firsthand knowledge on Software Defined Networking, OpenvSwitch, OpenDaylight Controller and fundamentals of Networking.

12th

Mahatma Gandhi Memorial College, Udupi [01/05/2012 – 01/05/2013]

Field(s) of study: Physics, Chemistry, Maths, Biology

Final grade : 91.83%

10th

T.A.Pai English Medium High School, Udupi [01/05/2010 – 01/05/2011]

Final grade : 96.16%

PUBLICATIONS

Suppressing Noisy Neighbors in 5G networks

<https://dl.acm.org/doi/abs/10.1145/3369740.3372768?download=true>

21st International Conference on Distributed Computing and Networking (ICDCN), January 2020, Kolkata, India

Improving Efficiency of Optical Camera Communication using Dynamic Rate Adaptation

<https://ieeexplore.ieee.org/abstract/document/9118091>

IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), December 2019, Goa, India

Bidirectional communication system with screen based transmission and camera based reception of QR encoded information

<https://ieeexplore.ieee.org/document/9058167>

IEEE International Conference for Convergence in Technology (I2CT), October 2018, Mangalore, India

Intelligent Traffic Management Edge Analytics

<https://builders.intel.com/docs/networkbuilders/intelligent-traffic-management-edge-analytics.pdf>

Intel + Wipro Whitepaper - Wipro Intelligent Traffic Management (ITM) provides edge analytics to enable real-time traffic monitoring.

PATENTS

METHOD AND SYSTEM FOR IMPROVING EFFICIENCY OF OPTICAL CAMERA COMMUNICATION

US 16/542,411 - Filed on June 17, 2019.

SYSTEM AND METHOD FOR MANAGING INTERFERENCE IN LI-FI COMMUNICATION NETWORK

US 16/774,002 - Filed on December 12, 2019

SYSTEM AND METHOD FOR MANAGING INTERFERENCE IN OPTICAL CAMERA COMMUNICATION BASED NETWORK

US 16/774,007 - Filed on December 12, 2019

METHOD AND SYSTEM FOR IDENTIFYING AND MITIGATING INTERFERENCE CAUSED BY ROGUE LI-FI ACCESS POINT

US 16/817,922 - Filed on March 13, 2020

METHOD AND SYSTEM FOR MANAGING INTERFERENCE CAUSED BY ROGUE NODE IN OPTICAL CAMERA COMMUNICATION NETWORK

US 16/835,468 - Filed on March 31, 2020

METHOD AND SYSTEM FOR MANAGING INTERFERENCE CAUSED BY ROGUE USER EQUIPMENT LI-FI COMMUNICATION NETWORK

US 16/937,957 - Filed on July 24, 2020

LANGUAGE SKILLS

Mother tongue: **Kannada**
English: C2

Hindi: C1

German: A1

PROJECTS

Automatic Detection and Identification of Vertebrae in X-Ray Images

[01/10/2016 – 01/11/2016]

Used Generalized Hough Transform (GHT) and Normalized Correlation algorithms to effectively identify all the vertebrae in X-Ray image data sets, under different scenarios (translation, rotation and scaling) of target images. The simulation was carried out on MATLAB.

Microcontroller based Automated Fire Alarm System

[01/07/2016 – 01/09/2016]

Interfaced IoT sensors (Temperature sensor LM35, Carbon Dioxide sensor and smoke detector) to a microcontroller (ATMEGA 64) to detect fire in the surrounding environment. Once detected, the controller was programmed to turn ON the alarming devices (LEDs, Buzzer) and send a text message to the Fire Service/ Building Owner via GSM Module Interface.

INTERNSHIPS

Wipro Technologies

[12/01/2017 – 12/07/2017]

Developed a Flow Rule Validation Application to detect and resolve conflicts in flow entries in OpenvSwitch (OvS) for an efficient network management in a Software Defined Network.

Azure Skynet Solutions Pvt. Ltd

[01/06/2016 – 01/07/2016]

Simulated various network configurations of Routers, Switches and host devices in Cisco Packet Tracer. Also implemented VLANs within a network and observed inter-network packet transmission. I was awarded the 'Zonal Winner of Brain Tech Network and Cyber Security Championship' for my performance during the internship.

KarMic Design Private Ltd

[01/12/2015 – 20/01/2016]

Designed a Fractional Order Chebyshev Filter. We realized a digitally controlled current division network in CADENCE EDA Tool. Also got certified in 'Digital VLSI Design using Cadence'

DIGITAL SKILLS

Programming Languages

Python / Java / C++ / Web Development: HTML 5, CSS, JavaScript

Operating Systems

Linux / Windows / MacOS

Software and Tools

MATLAB&Simulink / Cisco Packet Tracer / OpendayLight

Research Interests

5G / Edge Computing / Wireless Communication / Visible Light Communication / Software Defined Networking

HONOURS AND AWARDS

Zonal Winner of Brain Tech Network and Cyber Security Championship

Azure Skynet Pvt Ltd [01/07/2016]

CONFERENCES AND SEMINARS

Optical Wireless Communication (OWC) Using LiFi Based System and Optical Camera Communication (OCC) Based System

[25th National Conference on Communications (NCC), Indian Institute of Science, Bangalore, 19/02/2019]

Tutorial presentation

https://www.linkedin.com/posts/wipro_lifi-5gatwipro-innovationatwipro-activity-6504699105086971904-AMBb

Intelligent Traffic Management leveraging 5G Edge Computing

[2nd IEEE ComSoc Workshop on Intelligent Transportation System (ITS), Wipro, Bangalore, 01/11/2019]

Technical session

VOLUNTEERING

Co-chair of Workshop on "Optical Wireless Communication for 5G and Beyond"

[IEEE 5G World Forum, Bangalore, India, 10/09/2020 – 12/09/2020]

<https://ieee-wf-5g.org/workshop-on-optical-wireless-communication-for-5g-and-beyond-2020/>

Co-chair of "International Technology Bootcamp on Data Science"

[IEEE SSIT Madras Section, India, 04/06/2020 – 07/06/2020]