





Venkata Virajit Garbhapu

Ph.D Doctorant in Optical Networks | [Google Scholar](#) | [Telecom Paris](#)

CONTACT

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EDUCATION

PhD

Optical Networks
Institut Polytechnique de Paris
(Current)

MSc

Telecommunication Engineering
Politecnico Di Milano
2020

B.Tech

Electronics and Communication
Engineering
Amrita Vishwa Vidyapeetham
2017

SKILLS

Physical Layer Modelling

QoT Estimation

Network Planning

Failure Management

Autonomous Digital Twin

Summary

Optical Networks PhD Candidate with experience in modelling physical layer impairments for the next generation autonomous networks. Proficient in an array of network planning and optimization tools. Seeking out opportunities to gain research and industrial exposure to utilize my academic research expertise.

Research Experience

CIFRE PhD Doctorant **2020/11 - Current**
Telecom Paris, IP Paris

To develop a new optical network simulator that aims to take into account the physical layer impairments and eventually handle future optical functionalities such as QKD, etc. The tool is designed to accurately evaluate the QoT, by modelling precisely the physical degradations affecting the transmitted signals and is used in the routing and wavelength assignment for decision making at the network level.

- Supervisor : Prof. Cedric Ware
- Thesis : Realizing Impairment-Aware Optical Networks
- Publications :
 - V.V. Garbhapu, et al. "Physical Layer aware Network Simulator for future Optical Functionalities," 14th International Conference on Network of the Future (NoF), Izmir, 2023.
 - V.V. Garbhapu, et al. "Accurate Raman Noise modelling for the co-existence of the classical and the QKD signal and it adverse effects on the Network Capacity," PTL (submitted)
- Teaching :
 - 2022-23, ROSP941 "Propagation optique de l'information et systèmes de transmission point par point" as Lab teacher for Coherent Detection.
 - 2022-23, TELECOM205 "Projet de synthèse : système de communications" as Lab teacher for the OTDR, Chromatic Dispersion experiments.
 - 2022-23, INF103 "Langage JAVA" as teaching assistant.

PhD Engineer, Industrial Partner: **2020/11 - 2022/01**
Huawei Paris Research Center, France

- Supervisor : Dr. Yvan Pointurier, Optical Networking Team Leader
- Thesis : Strategies to allocate per channel power for reliable optical networks that would maximize the capacity
- Publications :
 - V.V. Garbhapu, et al. "Network-Wide SNR-based Channel Power Optimization," in 2021 ECOC.
 - A. Ferrari, V.V. Garbhapu, et al. "Demonstration of AI-Light: an Automation Framework to Optimize the Channel Powers Leveraging a Digital Twin," in 2022 OFC.

TOOLS

Net2Plan

GNPy

Hauwei QoT Estimator

OptiSys

ACHIEVEMENTS

Invention Disclosure

Huawei Paris Research Center
2022

Merit Gold Scholar

Politecnico Di Milano
2017 - 2020

Silver Medalist

Amrita University
2017

OTHER

EXPERIENCES

IEEE Student Chapter

President
Telecom Paris
2022 - 2023

AirBliss+

Technical Consultant
Eindhoven, Netherlands
2018 - 2019

- Patents :
 - Y. Pointurier, V.V. Garbhapu, A. Ferrari "Method for power setting in an optical network," European Patent Office (Filed).

Master Thesis

2019/02 – 2020/08

BONSAI, Politecnico Di Milano, Italy

- Supervisor : Prof. Massimo Tornatore
- Thesis : Transfer Learning for failure management in Optical Networks
- Publications :
 - V.V. Garbhapu et al, "Physics-aided Machine Learning for Failure Localization in Optical Networks", IEEE OJ-COMS (submitted 2024)
 - F. Musumeci, V.G. Venkata, et al, "Domain Adaptation and Transfer Learning for Failure Detection and Failure-Cause Identification in Optical Networks Across Different Lightpath", in 2022 IEEE/OSA JOCN.
 - F. Musumeci, V.G. Venkata, et al, "Transfer learning across different lightpaths for failure-cause identification in optical networks", in 2020 ECOC.

Bachelor's Thesis

2019/02 – 2020/08

Amrita University, India

- Supervisor : Prof. Sundararaman Gopalan
- Thesis : Low cost and highly reliable technology for rapid monitoring of vital health parameters
- Publications :
 - V.V. Garbhapu and S. Gopalan, "LTE-M for IoT Healthcare - Regression or Adaptation?", AFRICON 2023
 - V.V. Garbhapu and S. Gopalan, "IoT based low cost single sensor node remote health monitoring system", in Sep. 2017 Elsevier Procedia Computer Science.
 - S. Gopalan, S. Ramesh, S. Dutta, and V.V. Garbhapu. "Effects of substrate heating and post-deposition annealing on characteristics of thin MOCVD HfO2 films", in 2018 Materials Science and Engineering Conference Series.

IASc-INSA-NASI Research Fellow

2017/01 – 2017/08

Central University, India

- Supervisor : Prof. Samrat L Sabat
- Research Topic : Design and implementation of electronic circuits for Wireless Transducers Network