

Raghuwansh Raj

Email: raghuwansh.raj@uni.lu • **Phone:** (+352) 661-333-553

• [LinkedIn](#) • [Github](#) • [Coding](#) • [Homepage](#)

EDUCATION

University of Luxembourg, Belval, Luxembourg Sep 2025 | **Present**
PhD in Geometrical and Topological Deep Learning

• Geometrical Aspect of Deep Learning, Group theory, Equivariance and Invariance, Manifolds and Graphs.

CentraleSupélec, Paris, France Sep 2021 | Mar 2023
Msc in Machine learning CGPA: 15.35/20.00

• Foundational aspect of Machine learning and Deep Learning, interdisciplinary corporate projects.

Indian Institute of Technology (IIT) BHU, Varanasi, India Jul 2016 | Jun 2020
Bachelor of Engineering: Mathematics CGPA: 8.60/10

• Courses and lab works from Mechanical and Electrical Engineering, Fluid Mechanics, Rock Mechanics, Mathematics, Computer programming, Machine Learning, Classical and Quantum Physics.

ACADEMIC EXPERIENCE

ESSEC Business Schol Paris, France
Statistics Teaching Assistant (TA) Jan 2022 | Apr 2022

- Teaching Business Statistics to a class strength of 50 Pre Master Students.
- Topics covered during session were Linear Regression, Logistic Regression, K-means, PCA, LDA, Singular value Decompositions, Moments, Expectations and Central Limit Theorem.

Transvalor & CentraleSupélec Sophia Antipolis, France
corporate research (CRP) in masters Jan 2022 | Jun 2022

- Worked with Professor Francesca Bugioti and a mentor from Transvalor (Jose Alves), along with 5 talented team members during the Master's program.
- Implemented Graph Neural Network (GNN) based surrogate model to model FEA. The model bold optimize the faster parameter search space exploration, particularly pressure and temperature, reducing the time from 155 min to less than 1 sec.

PUBLICATIONS

Preprint on arXiv

Graph Neural Network based surrogate model for Finite Element Analysis

[paper](#)

- Developed Graph Neural Network based prediction model to act as a surrogate model for parameters search space exploration.
- Acknowledged for contributions to a paper submitted to the arXiv scientific repository under the mathematics category, assisted with data preparation, editing, and modeling experiment.

PROFESSIONAL EXPERIENCE

STELLANTIS

Paris, France

Machine Learning Engineer (Full Time)

Jun 2023 | sep 2025

- Created end-to-end MLOps pipelines, software development practices for version control(git), class abstraction, optimised code using PySpark, and parallel computing and mlflow in Databricks.
- Implemented a exploitable knowledge graph using pyspark and neo4J. The graph partitions the drivers into data-derived persona group. The Stellantis team is able to exploit the delivered code to build, deploy and exploit a large graph model

AMAZON

Paris France

Business Intelligence and Data Engineering (Internship)

Jul 2022 | jan 2023

- Reduced the process time of forecast state for stakeholders by 50% by optimising code modules and deployed on the AWS cloud using EC2 and streamlit. Experience with AWS tools like Sagemaker, Quicksight, Redshift , Datanet etc.

ZESTMONEY

Bangalore, India

Data Sceintist (Full time)

Jul 2020 | Aug 2021

- Worked within Credit and Risk Team in the domain of Buy Now Pay Later(BNPL). Implemented various financial models for assessing Lender risk, customer life time value, default score. Developed feature library in C++ for faster feature computation, and scoring at production level.

PROJECTS

• Link Prediction in Citation Network

[GitHub](#)

(graph neural network, network science, graph theory, python). Predicted missing edges between citation network graph by extracting graphical, textual, and other semantic information. **Kaggle rank: 2.**

• Covariance Matrix Adaptation (CMA) - ES Algorithm

[github](#)

A numerical optimization technique that is independent of derivative calculation, reviewed, forked and contributed to open source during class group project of advance optimization course.

• 2D Flappy Bird game using RL

[github](#)

Designing a simple version fo 2D Flappy bird game form Scracth using reinforcement learning.

SELECTED COURSES

Master's Courses

- # Foundations of Deep Learning
- # Advance Machine Learning
- # Advanced Optimization
- # Graphical Models
- # Machine Learning in Network Science
- # Reinforcement Learning

Bachelor's Courses

- # Engineering Mathematics
- # Operation Research
- # Numerical Solution to PDEs
- # Finite Element Analysis
- # Mathematical Modeling and Simulation
- # Engineering Physics

CERTIFICATIONS

• Quantum Mechanics

IIT Kanpur

Cleared the exam for basics of Quantum Mechanics taught by HC Verma - [certificate](#)

- **Theory of relativity** IIT Kanpur
cleared the exam for basics of special theory of Relativity taught by HC Verma - [certificate](#)
- **Deep Learning nanodegree** Udacity
Cleared the udacity training for deep learning 4 month certification program - [certificate](#)
- **Computer Vision** Coursera
Finished the basics of computer vision from buffalo university - [certificate](#)

SKILLS

- **Programming:** Python(Intermediate),Pyspark, C, C++(Intermediate),MATLAB, R, SQL.
- **Software:** Data Structures, Algorithms, Amazon Web Services(AWS), Putty, Docker, Git, Flask, Tensorflow, PyTorch, Tableau, EC2, S3, MS Office, Object Oriented Programming (OOP), Databricks.
- **Soft Skills:** Team Work, Communication, Time Management, problem Solving.

ACHEIVEMENTS

- **IIT JEE Examintaion** Patna, India
Cleared the most sought engineering exam in India (0.7 % in 1.5M candidates) May 2016
- **Music School - Prayag Raj Samhiti** Varanasi, India
Acheived Diploma in TABLA(Classical based Percussion instrument in Indian Culture) Mar 2014

ExtraCurriculars

- Percussion Instrument TABLA
- Mountain Trekking - Himalayas(ABC base camp, EBC soon :))
- GYM, Running, Chess, Social deduction board games.

REFERENCES

- **Prof. Jean Marc Schlenker**
Professor of mathematics at University of Luxembourg
Scholar profiles: [Google Scholar](#) | [Homepage](#)
- **Prof. Fragkiskos D. Malliaros**
professor of Data Science at CentraleSupélec, France
Scholar Profiles: [Google Scholar](#) | [Homepage](#)
- **Prof. Jun Pang**
Professor of Computer Science at University of Luxembourg
Scholar Profiles: [Google Scholar](#) | [HomePage](#)
- **Matteo Sammarco, PhD**
Team Head Machine learning at Stellantis, Paris, France
Profile: [LinkedIn](#)

contact available on request.