

OSHIN RAWLLEY

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RESEARCH INTERESTS

Perception in Autonomous Vehicles, Object Detection, Edge Computing, Vehicular Communications (V2X) in Internet of Vehicles (IoV).

AWARDS AND ACHIEVEMENTS

FELLOWSHIPS

1. **International Travel Support (ITS) Scheme, Science and Engineering Research Board (SERB).** for participating in "35th Intelligent Vehicles Symposium (IV), South Korea (02 June, 2024 to 05 June, 2024)" South Korea.

PROJECTS

1. **Project Title-** Development of AI-Empowered Vision-Based Driver Support System for Autonomous Vehicles.

Fellowship Name- CHANAKYA PhD Fellowships scheme (Fellowships Programme) of [IIT-Indore DRISHTI CPS Foundation](#) under the National Mission on Interdisciplinary Cyber Physical System (NM-ICPS) of Department of Science and Technology, Government of India”.

Fellowship Awardee- Oshin Rawlley

Sanctioned amount- Rs. 15.57 lakhs

Project Duration: 2022- 2025

Status: Ongoing

Website Link- [Result List of Selected Projects](#)

2. **Project Title-** Development of Low-Cost Federated Learning Empowered Digital Twin Framework for Structural Health Monitoring (SHM) of Roads and Bridges built under PMGSY

Sponsored Agency- I-DAPT HUB FOUNDATION, Indian Institute of Technology (BHU) Varanasi.

Job Role- Project intern

Sanctioned amount- Rs. 11.88 lakhs

Project Duration: 2023- 2025

Status: Ongoing

RESEARCH AND PUBLICATIONS

JOURNALS

- Rawley, O., Gupta, S., Mahajan, K., & Rathore, S. (2024). Green-EMulTO: A Next Generation Edge-Assisted Multi-Level Traffic Orchestrator for Green Computing in Consumer Autonomous Vehicles. *IEEE Transactions on Consumer Electronics*.
- Rawley, O., Gupta, S., Kathera, H., Katyal, S., & Batwara, Y. (2024). Employing cross-domain modelings for robust object detection in dynamic environment of autonomous vehicles. *Multimedia Tools and Applications*, 1-47.
- Raj, M., Harshini, N. B., Gupta, S., Atiquzzaman, M., Rawley, O., & Goel, L. (2024). Leveraging Precision Agriculture Techniques using UAVs and Emerging Disruptive Technologies. *Energy Nexus*, 100300.
- Katyal, S., Gupta, S., Rawley, O., & Ghosh, D. (2024). A fog-driven three-factor authentication protocol for secure data sharing in Internet of Vehicles cyber-physical systems. *Concurrency and Computation: Practice and Experience*, 36(8), e7981.
- Gera, B., Raghuvanshi, Y. S., Rawley, O., Gupta, S., Dua, A., & Sharma, P. (2023). Leveraging AI-enabled 6G-driven IoT for sustainable smart cities. *International Journal of Communication Systems*, 36(16), e5588.
- Rawley, O., & Gupta, S. (2023). Artificial intelligence-empowered vision-based self driver assistance system for internet of autonomous vehicles. *Transactions on Emerging Telecommunications Technologies*, 34(2), e4683.
- Mukherjee, S., Gupta, S., Rawley, O., & Jain, S. (2022). Leveraging big data analytics in 5G-enabled IoT and industrial IoT for the development of sustainable smart cities. *Transactions on Emerging Telecommunications Technologies*, 33(12), e4618.

CONFERENCES

- Mahajan, K., Rawley, O., Gupta, S., & Singh, S. (2024, June). FMS: Enhancing Fleet Management Scheme with Long Term Low-Latency V2X Services and Edge-based Video Stream Analytics. In *2024 IEEE Intelligent Vehicles Symposium (IV)* (pp. 1822-1827). IEEE.
(Accepted and published online)
- Rawley, O., Gupta, S., (2023, January). PADAAB: Enhancing Perception Systems using GAN-generated Adversarial Augmented Domains for Autonomous Vehicles. In *2023 IEEE International Conference on Pervasive Computing and Communications (PerCom 2023)*.
(Accepted and published online)
- Ghosh, D., Kathara, H., Rawley, O., Gupta, S., Arulselvan, N., & Chamola, V. (2022, June). Artificial Intelligence-Empowered Optimal Roadside Unit (RSU) Deployment Mechanism for Internet of Vehicles (IoV). In *2022 IEEE 23rd International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)* (pp. 495-500). IEEE.
(Accepted and published online)

- Rawley, O., & Gupta, S. (2022, May). An Upgraded Object Detection Model for Enhanced Perception and Decision Making in Autonomous Vehicles. In 2022 IEEE International Conference on Communications (ICC) (pp. 1201-1205). IEEE.
(Accepted and published online)
- Rawley, O., & Singh, S. N. (2018, February). 3-D modelling of multidimensional & disparate data in visual analytics. In 2018 4th International Conference on Computational Intelligence & Communication Technology (CICT) (pp. 1-5). IEEE.
(Accepted and published online)

BOOK CHAPTERS

- “A Computational Approach for Regulation of Biomedical Waste Expulsion in a Novel Coronavirus Pandemic” - A book chapter accepted in Press and printed in Handbook of Mathematical and Computational Modelling of Covid-19 Transmission, 336, 2023
- "Achieving Ambient Intelligence in Addressing the COVID-19 Pandemic Using Fog Computing-Driven IoT", - A book chapter accepted in Press and printed in Handbook of Advancing Smarter and More Secure Industrial Applications Using AI, IoT, and Blockchain Technology, IGI-GLOBAL, 2021.

CERTIFICATIONS

2022

1. Certified Level 1 in TIH Foundation for IoT and IoE. Introductory course on IoT and IoE participation awarded by **IIT Bombay**.

TECHNICAL SKILLS

- **Programming Languages known-** C, C++, Java, basics of python and database management system (Oracle)
- **Research Softwares** - Latex, Mendeley Reference Manager, Smart Draw, Visio
- **Operating System-** Basics of MS Windows, Ubuntu
- **Windows Applications-** Microsoft Word, Excel, Power Point

PROFESSIONAL MEMBERSHIPS

- IEEE Student Member- #97841089
- ACM Student Member- 6790855

REVIEWER IN PEER-REVIEWED JOURNALS

Actively reviewing Journals listed

- i. Ad Hoc Networks
- ii. IEEE Transactions on Intelligent Transportation Systems
- iii. Artificial Intelligence
- iv. Cluster Computing

- v. IEEE Journal of Biomedical and Health Informatics
- vi. Wireless Personal Communications
- vii. The Journal of Supercomputing
- viii. Multiscale and Multidisciplinary Modeling, Experiments and Design

Actively reviewing Conference listed

- i. International Conference on Frontiers in Computing and Systems (COMSYS-2023)

TEACHING EXPERIENCE

- **Computer Programming**

(Teaching Assistant with Prof. Jagat Sesh Challa at BITS Pilani, Rajasthan – Oct-Jan, 2022)

- **Data Structures and Algorithms**

(Teaching Assistant with Prof. Vishal Gupta at BITS Pilani, Rajasthan – Jan-May, 2021)

- **Logic in Computer science**

(Teaching Assistant with Prof. Jagat Sesh Challa at BITS Pilani, Rajasthan – Aug-Dec, 2021)

- **Object Oriented Programming Language**

(Teaching Assistant with Prof. Avinash Gautam at BITS Pilani, Rajasthan – Jan-May, 2024)

- **Introduction to Python**

(Teaching Assistant at VIT University, Bhopal, MP -Sept- Nov, 2020)

TECHNICAL COURSEWORK

- **Data Mining**

Taught by [Prof. Poonam Goyal](#) at BITS Pilani, Rajasthan.

- **Advanced Algorithms and Complexity**

Taught by [Prof. Abhishek Mishra](#) at BITS Pilani, Rajasthan.

- **Design and Analysis of Algorithms**

Taught by [Prof. Abhishek Mishra](#) at BITS Pilani, Rajasthan.

- **Machine Learning**

Taught by [Prof. Kamlesh Tiwari](#) at BITS Pilani, Rajasthan.

- **Data Structures**

Taught by [Prof. Vishal Gupta](#) at BITS Pilani, Rajasthan.

WORK EXPERIENCE

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- Worked as an Assistant Professor (CSE) in Sagar Institute of Science and Technology, Bhopal (MP) for 9 months.
Duration: Feb-November 2019
 - Involved as a Co-PI in TEQUIP-III conducted by RGPV State University Bhopal in “Geo Based Smart Accident Alert and Rescue System”.

INTERNSHIP EXPERIENCE/ PROFESSIONAL COURSES

Name of Organisation /Duration Project Outline

- Centre for Research & Industrial Staff Performance (CRISP) - C language
(July 11,2013 - Aug 12,2013)
Learnt basics of C language.
- Centre for Research & Industrial Staff Performance - Oracle (major training in oracle)
(July 11,2014 - Aug 12,2014)
Learnt basics of Database

LANGUAGES KNOWN

Strong reading, writing and speaking competencies for Hindi, English, French (basic)