# Naveen Kumar Tiwari

Deparment of CSE,
REC Kannauj
UP-209732
Mo.: +91 8588825603
E-mail: naveen@reck.ac.in

| | |
|---|---|
| **AREA OF INTERESTS** | I am working as Assistant Professor in department of Computer Science and Engineering at Rajkiya Engineering College Kannauj. My area of interests are Computer Vision, Artificial Intelligence, Machine Learning, Neural Networks, Software Defined Networks and Internet of Things. |

**EDUCATION**

**NIT Patna**, Patna, India
*PhD*, Computer Science and Engineering, (Pursuing)
CGPA: 8.22

**IIT Delhi**, New Delhi, India
*Master of Technology*, Computer Science and Engineering, June 2015
CGPA: 7.165

**Institute of Technology and Management**, Gorakhpur, Uttar Pradesh
*Bachelor of Technology*, Computer Science and Engineering, June 2012
Percentage: 73.64

**M. P. Inter College**, Gorakhpur, Uttar Pradesh
*Intermediate*, PCM & Computer Science, May 2008
Percentage: 79.6

**CTSVM Inter College**, Siswa Bazar, Maharajganj, Uttar Pradesh
*High School*, Science, May 2006
Percentage: 75.16

**SCHOLASTIC ACHIEVEMENTS**

| | |
|---|---|
| **GATE Score** | GATE 2013 |
| All India Rank: 203 | Mar 2013 |
| Score: 745/1000 | |

| | |
|---|---|
| **UGC-NET** | UGC-NET II |
| Qualified for JRF and Asst. Professor | DEC 2019 |
| Score: 60% (180/300) | |

**EXPERIENCE**

| | |
|---|---|
| **Assistant Professor** | Rajkiya Engineering College Kannauj |
| From 1st January, 2018 | Kannauj |

Working as Assistant Professor in Department of Computer Science & Engineering, REC Kannauj. Have taught various courses such as Computer Networks, Database Management System, Computer Organization and Software Engineering.

**INDUSTRY EXPERIENCE**

| | |
|---|---|
| **Associate Projects** | Cognizant Technology Solutions India |
| From 6th July, 2015 | Noida |

Software Engineer @ Cognizant Technology Solution, Noida. Since Jul 2015. Working in Application Team responsible for creating smart TV apps along with Set Top Box application; using HTML/Java script with various frameworks such as Meteor and d3.js etc. Developed an OTT application on Roku, developed test automation scripts for Roku-OTT app on Xenon.

| | |
|---|---|
| **INDUSTRIAL PROJECTS** | **Charter-VOD MicroservicesDev N** @ Cognizant [May, 2017 - Continuing] |

**INDUSTRIAL PROJECTS**

**Charter-VOD MicroservicesDev N** @ Cognizant [May, 2017 - Continuing]
Responsibilities restricted to Pre-Prod and QA
1. Team responsible for Stack-B operations and responsible for entire pre-production environment.
2. Current works involves fixing issues by coordinating with various components checking logs and ensure uninterrupted flow of video assets.

**Huawei-Airtel PDL Migration-O** @ Cognizant [Jan, 2017 - May, 2017]
Provide Integration between huawei content server and distribution server
1. Integration involves providing multi-screen streaming from content server to distribution server.
2. My role include supporting the production environment.

**Roku OTT (Over The Top) Application** @ Cognizant [Mar, 2016 - Jan, 2017]
Developed an OTT application for Roku using BrightScript.
1. Designed and developed various UI modules.
2. Integrated with Huawei HVS (Hybrid Video Solution) server.
3. Developed automation test script on xenon.

**Comms SGO - Comcast nXg** @ Cognizant [Nov, 2015 - Mar, 2016]
Developed tree and bundle layouts for various types of STB errors.
1. Developed UI with d3.js.
2. Integrated with error database.
3. Awarded with 'Pat on the back'.

**ACADEMIC PROJECTS**

**M. Tech Thesis Part-1: SDN Controller Architecture and Design** @ IIT Delhi
Designed a SDN ( Software Defined Network ) controller as layered 7 layer architecture.
1. The layers including dependencies.
2. All the Functions and parameters.
3. Use Cases and Algorithms

**M. Tech Thesis Part-2: Forwarding Rule Compression For Inter Subnet Flow** @ IIT Delhi
Designed and simulated Flow Compression Algorithm in Software Defined Network.
1. Inspired from existing Autonomous Systems (AS), Created virtual, intra domain subnets (Controlled by a SDN Controller), and assign them IP addresses in hierarchical manner.
2. After addressing (done in initialization of controller), a new flow request is matched with existing rule on the switch for same source and destination subnets. If there is a similar rule then put a wildcard character after subnet address part.
3. Then, new requests for same source and destination subnets will be entertained using the compressed rules having wildcard rules.
4. Rule compression not only saves a lot of TCAM memory at switches but also reduces switch-to-controller communication hence improving throughput.

**Localization within Bharti building (CSE IIT Delhi) using WiFi** @ IIT Delhi
Try to localize a mobile device such as Laptops, smartphones having Wi-Fi capabilities.
1. Use signal strength of coming through various APs to triangulate.
2. Used 4 machine learning algorithms i.e. QDA, Decision Tree, SVM and k-mean clustering.
3. These algorithms are used to predict approximate location based previously clustered data.

**Computing Multi Commodity Flows** @ IIT Delhi
1. Implemented multi commodity flow algorithm suggested in the literature.
2. Algorithm solves the dual of the problem by assigning edges a length function.
3. Tested and perform profiling for large graphs such as 100*100 grid graph.

**Emulate a virtual datacenter network using Mininet, Demonstrate Incast and Solution** @ IIT Delhi
1. Emulated Incast in a virtual high speed low latency network (having Fat Tree Topology)
2. Implemented solutions suggested by the literature such as DCTCP, changing retransmission time and a application layer solution.
3. Tested and done performed profiling of the algorithms

**Multi-User 2D car racing game** @ IIT Delhi
1. Developed two dimensional car racing game with basic rendering capabilities.
2. Used OpenCL library to render objects.
3. Used socket programming to provide multi-user functionality.

**Cluster Monitoring** @ ITM Gorakhpur
1. Based on Active-Active Architecture, Consist of two Nodes.
2. Use to execute a binary process on a particular node entered by user.
3. If any node fails, then the processes which are currently running on that node is automatically transferred to other node without any interruption.

| | |
|---|---|
| **COMPUTER SKILLS** | **Languages**: C, C++, Python, Matlab, Java, Prolog, LaTeX.<br>**Web Development**: HTML, CSS, JavaScript, JQuery, D3.js, Angular.js.<br>**Applications**: Eclipse, Git, VMWare, VirtualBox, Oracle 11g.<br>**Operating Systems**: Unix, Linux, Windows, Android. |

**PATENTS**

**GRANTED PATENTS**
1. An effective method for detecting and preventing malicious node for collaborative grayhole threats in mobile ad-hoc networks. **(Patent No: ZA202,110,308 B)**

2. An evolutionary neuro-fuzzy system using evolutionary fuzzy clustering and syndicated neural networks. **(Patent No.: DE202022104771U1)**

**PUBLICATIONS**

**JOURNALS**
1. Upaddhyay VK, Soni SK, Tiwari NK. Reliability analysis of cascaded $\eta - \mu$ fading channels. Transactions on Emerging Telecommunications Technologies. 2022 Dec;33(12):e4612.

2. Kashyap R, Joshi G, Yadav S, Saxena M, Tiwari NK. A study on analytic resolvent semilinear integro-differential equations with control functions. International Journal of Nonlinear Analysis and Applications. 2022 Jul 1;13(2):1685-92.

3. Bajpai A, Yadav S, Tiwari N, Yadav A, Chaurasia M. A Novel Power-Efficient Data Aggregation Scheme for Cloud-Based Sensor Networks. International Journal of Mobile Computing and Multimedia Communications (IJMCMC). 2022 Jan 1;13(1):1-4.

4. Monika Mehra, Sudarshan Maurya, Naveen Kumar Tiwari, Network Load balancing in Software Defined Network: A Survey, International Journal of Applied Engineering Research ISSN 0973-4562 Volume 14, Number 2, 2019 (Special Issue)

**CONFERENCES**
1. Yadav, Sanjeev, Rupesh Kumar, Naveen Tiwari, and Abhishek Bajpai. "An Effective Approach to Detect and Prevent Collaborative Grayhole Attack by Malicious Node in MANET." In International Conference on Intelligent Systems Design and Applications, pp. 318-335. Springer, Cham, ISBN 978-3-030-49342-4, (2019).

2. Mishra Pranchal, Ayush Tripathi, Abhishek Bajpai, and Naveen Tiwari. "Hybrid Approach for Trajectory Identification of Mobile Node via Lagrange Interpolation and Kalman Filtering Framework ." In International Conference on Intelligent Systems Design and Applications, pp. 530-539. Springer, Cham, ISBN 978-3-030-49342-4, (2019).

3. Sudarshan Maurya, Naveen Kumar Tiwari, SC Gupta, Layered Software Defined Networking, Optical and Wireless Technologies, Pages 351-362, Springer, Singapore, ISBN 978-981-10-7395-3, (2018)

4. Ankur Tripathi, Naveen Kumar Tiwari, Ankita Srivastava, Shikhar Pandey, Job Scheduling for HPC-Cluster Using DynPP Scheduler (Dynamic Priority Policy), National Conference on Development of Reliable Information Systems, Techniques and Related Issues (DRISTI), Page-56, ISBN-9789381583272, (2012 )

**COMMITTEES SERVED / INVITED**

**1. Organizing Committee**     Member
7-8, Jun 2019     International Conference
International Conference On Academic Science and engineering at Hotel The Golden Apple at Lucknow organized by Institute For Engineering Research and Publication (IFERP)

**2. Advisory Committee**     Member
10-11, Jan 2020     International Conference
International Conference On Recent Trends in Electrical, Electronics and Computer Science Engineering (ICEECS-20) at Uma Nath Singh Institute of Engineering and Technology, Deokali, Uttar Pradesh.

**POSITIONS HELD**

**Hostel Warden**     Warden
Feb 2023 - Till Date     New Boys hostel
Looking after a newly constructed hostel as warden.

**Computer Center**     In-Charge
Jan 2018 - Till Date     Central Computer Center
Looking after central computing facility.

**Computer Center**     In-Charge
Oct 2020 - Till Date     Institute Website
Looking after and managing Institute Website.

**DDU Scheme**     Coordinator
Jan 2018     DDUQIP
Coordination of an University sponsored scheme.

**Training & Placement Cell**     Deputy In-Charge
Jan 2018 - July 2021     Training & Placement Cell
Looking after Training & Placement cell.

**AWARDS & HONOURS**

**Pat On The Back**     Cognizant Technology Solutions India
Feb, 2016     Noida
Learned new technology (D3.js) and applied the same in delivering to time critical demo. Also handled many last minutes changes as well.

**District Topper**     MP Inter College
May, 2008     Gorakhpur
With 79.6% marks in state board examination, I secured 1st position in Gorakhpur.

**Maharana Bhagwat Singh Smarak**     MP Inter College
Jan, 2008     Gorakhpur
Awarded by Member of Parliament (Gorakhpur City) Yogi Adityanath.

**HOBBIES**     Following Spy movies (James Bond). Following current affairs (Defense and International Relations), Computer Gaming (First and Third person shooting) ...Et Cetera.