Ramesh Paudel

EDUCATION

2016-Present   **PhD Candidate in Computer Science**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.
Anomaly/Fraud Detection, Machine Learning, Data Science, Graph Mining

2012–2014   **Masters in Computer Science**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.
Graph Mining, Data Science, and Machine Learning

2007–2010   **Bachelor in Information Technology**, PURBANCHAL UNIVERSITY, Nepal.

EXPERIENCES

2016–Present   **Research Assistant**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.
Actively working on research related to anomaly/fraud detection using graph-based approach, concept drift detection, graph streams classification, and change detection on time-series data

2014–2016   **Data Analyst/Software Developer**, BESPOKE HOUSE INC., Boston, MA.
- Analyze web, social media and search data using SQL and Google Analytic.
- Analyze booking and buying pattern for hotels and suggest marketing campaign.
- Persona classification using CRM data to develop an effective marketing campaign for lead generation
- Assemble, monitor and develop search engine optimization campaigns.
- Develop real estate and boutique hotel websites using C# and Asp.Net platform.

2010–2012   **Software Developer**, MIDAS TECHNOLOGIES, Kathmandu, Nepal.
- Develop report interface, laboratory, medical record & OT module of Hospital Management Info. System.
- Verify, process, and analyze the HMIS data.
- Provide report/feedback to government agencies/hospitals on coverage and quality of health services.

OTHER EXPERIENCES

2018   **Instructor**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.
Course taught: **Discrete Mathematics**

2016   **Lab Instructor**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.
Course conducted: **Data Structure and Algorithms**

2012–2014   **Teaching Assistant**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.
Assisted Courses: Data structure/algorithm, Computer Programming

2012   **IT support**, COLLEGE OF ENGINEERING, TTU, Cookeville, TN.

TECHNICAL SKILLS

Language   Python, R, SQL, Asp.Net, C#, Java, C++, Php, LaTeX, Javascript, HTML, CSS

Tools   Tensorflow, Keras, Scikit-learn, Numpy, Scipy, Pandas, Matplotlib, Seaborn, Plotly, Tableau, Weka, Orange, Git/GitHub, Google Analytic, Rabbitmq, Jupyter Notebook,

Data Skill   Anomaly/Fraud Detection, Machine Learning, Data Mining, Data Visualization, Data Cleaning, Graph Mining, Time-series Analysis

Database   MySql, Oracle, SQL Server

PUBLICATIONS

2019   **R Paudel**, P Kandel, and W Eberle, "Detecting Spam Tweets in Trending Topics using Graph-Based Approach", *Accepted at: Future Technology Conference - 2019,* 📄.

R Paudel, P Harlan, W Eberle, "Detecting the Onset of a Network Layer DoS Attack with a Graph-Based Approach", *In Proceedings of the FLAIRS Conference 2019,* 📄.

2018   **R Paudel**, W Eberle, L Holder, "Anomaly Detection of Elderly Patient Activities in Smart Homes using a Graph-Based Approach", *In Proceedings of International Conference on Data Science,* 📄.

R Paudel, K Dunn, W Eberle, D Chaung, "Cognitive Health Prediction on the Elderly Using Sensor Data in Smart Homes", *In Proceedings of the FLAIRS Conference 2018,* 📄.

2017   **R Paudel**, W Eberle, D Talbert, "Detection of Anomalous Activity in Diabetic Patients Using Graph-Based Approach", *In Proceedings of the FLAIRS Conference,* 📄.

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Poster	**R Paudel**, W Eberle, "An Approach For Concept Drift Detection in a Graph Stream Using a Discriminative Subgraph", *In Proceedings of Student Research and Creative Inquiry, 2019.*
	R Paudel, J Park, and W Eberle , "Mining Heterogeneous Graph for Patterns and Anomalies", *In Proceedings of Student Research and Creative Inquiry, 2018.*
	R Paudel and W Eberle , "Mining Twitter Network for Interaction Patterns", *In Proceedings of Student Research and Creative Inquiry, 2014.*
Under Review	**R Paudel**, T Muncy, and W Eberle, "Detecting DoS Attack in Smart Home IoT Devices Using a Graph-Based Approach", *2019 International Workshop on IoT Big Data and Blockchain.*
	R Paudel and W Eberle, "An Approach For Concept Drift Detection in a Graph Stream Using Discriminative Subgraphs", *ACM Transaction on Knowledge Discovery from Data - 2019.*

PROJECTS

2019	**Predicting Highest Growth Customer**, Ω.
	Prediction of Job Apply Rate for User Visiting Glassdoor, Ω.
2017	**Anomaly Detection in Opioid Prescription**, 🗎.
	Analysis of Pattern Learning and Anomaly Detection on Streams, 🗎.
2014	**LINKCUBE: A Tool for Anomaly Detection in Social Network using GBAD**, Ω.

AWARDS, HONORS, AND GRANTS

Research Assistant Fellowship, by Tennessee Tech University - College of Engineering (COE) for achieving Carnegie classification, *awarded for being one of the top students from COE, 2016-Present.

Researcher (Cybersecurity), *NSF Grant Number 1852126*, under the PI/co-PI Dr. Syed Rafay Hasan and Dr. Mohamed Mahmoud, 2019.

Best Research Poster, *An Approach for Concept Drift Detection in a Graph Stream using Discriminative Subgraph*, The 14th Annual Research and Creative Inquiry Day, 2019.

Researcher (Cybersecurity), *NSF Grant Number 1560434*, under the PI/co-PI Dr. Syed Rafay Hasan and Dr. Mohamed Mahmoud, 2018.

RESEARCH INTERESTS

o Graph Stream Classification	o Graph-based Anomaly Detection
o Machine Learning & Artificial Intelligence	o Anomaly/Fraud Detection
o Concept Drift Detection	o Time-series Analysis

PRESENTATIONS

Research Paper Presentation, *The Thirty Second International FLAIRS Conference*, FL, 2019.

Research Paper Presentation, *International Conference on Data Science*, Las Vegas, NV, 2018.

Research Presentation, on *"Anomalous Activity Detection in Smart Homes using a Graph-Based Approach"*, at the Graduate Student Seminar, 2018.

Research Paper Presentation, *The Thirtieth International FLAIRS Conference*, FL, 2017.

CONFERENCES AND WORKSHOPS

The Future Technologies Conference (FTC 2019), San Francisco, CA 2019.

The 32nd International FLAIRS Conference, Sarasota, FL 2019.

The International Conference on Data Science (ICDATA), Las Vegas, NV 2018.

The 30th International FLAIRS Conference, Sarasota, FL 2017.

OTHER EXPERIENCES

Paper Reviewer, IEEE Journal of Biomedical and Health Informatics, 2019.

Graduate Research Mentor, NSF Research Experience for Undergraduates, 2019.

Paper Reviewer, Springer Journal on Social Network Analysis and Mining (SNAM), 2019.

Graduate Research Mentor, NSF Funded Research Experience for Undergraduates, 2018.

Paper Reviewer, SIAM International Conference on Data Mining (SDM), 2017.

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