

# Ramesh Paudel

1314 W Broad St, Apt G1

Cookeville, TN 38501

☎ (980) 621 0415

✉ [rpaudel42@students.tntech.edu](mailto:rpaudel42@students.tntech.edu)

🏠 <https://rpaudel42.github.io>

🌐 [www.linkedin.com/in/rpaudel42](https://www.linkedin.com/in/rpaudel42)

🔗 <https://github.com/rpaudel42>

---

## EDUCATION

- 2016–Present **Ph.D. in Computer Science**, TENNESSEE TECH UNIVERSITY, Cookeville, TN,  
Dissertation: Fast and Efficient Anomaly Detection in Non-Stationary Graph Stream.  
Advisor: Dr. William Eberle
- 2012–2014 **Masters in Computer Science**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.  
Specialized in Data Mining and Machine Learning
- 2007–2010 **Bachelor in Information Technology**, PURBANCHAL UNIVERSITY, Nepal.

---

## RESEARCH INTERESTS

- o Machine Learning
- o Artificial Intelligence
- o Cyber Security
- o Social Network Analysis
- o Anomaly/Fraud Detection
- o Graph Mining
- o Concept Drift Detection
- o Time-series Analysis

---

## RESEARCH EXPERIENCES

- 2016–Present **Research Assistant**, TENNESSEE TECH UNIVERSITY, Cookeville, TN.  
Actively working on research related to anomaly/fraud detection in smart homes IoT devices, healthcare, and social network, concept drift detection, and graph streams classification.
- summer-2019 **Graduate Research Mentor**, COLLEGE OF ENGINEERING-TTU, Cookeville, TN.  
Supervised "Detecting DoS Attack in Smart Home IoT Devices" project funded by NSF under Research Experience for Undergraduates (REU) - Cybersecurity program
- summer-2018 **Graduate Research Mentor**, COLLEGE OF ENGINEERING-TTU, Cookeville, TN.  
Supervised "Detecting the Onset of Network Layer DoS Attack" project funded by NSF under Research Experience for Undergraduates (REU) - Cybersecurity program.

---

## TEACHING 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

---

## INDUSTRY EXPERIENCES

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

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

---

## PUBLICATIONS

- 2019 **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, (accepted)*.
- Ramesh Paudel**, Prajjwal Kandel, and William Eberle, “Detecting Spam Tweets in Trending Topics using Graph-Based Approach”, *In Proceedings of the Future Technology Conference - 2019*.
- Ramesh Paudel**, Peter Harlan, William Eberle, “Detecting the Onset of a Network Layer DoS Attack with a Graph-Based Approach”, *In Proceedings of the FLAIRS Conference*.
- 2018 **Ramesh Paudel**, William Eberle, Lawrence Holder, “Anomaly Detection of Elderly Patient Activities in Smart Homes using a Graph-Based Approach”, *In Proceedings of 2018 International Conference on Data Science*.
- Ramesh Paudel**, Kimberlynn Dunn, William Eberle, Danielle Chaung, “Cognitive Health Prediction on the Elderly Using Sensor Data in Smart Homes”, *In Proceedings of the Thirty-First International FLAIRS Conference (FLAIRS-31)*.
- 2017 **Ramesh Paudel**, William Eberle, Doug Talbert, “Detection of Anomalous Activity in Diabetic Patients Using Graph-Based Approach”, *In Proceedings of the Thirtieth International FLAIRS Conference (FLAIRS-30)*.
- Poster **Ramesh Paudel**, William Eberle, “An Approach For Concept Drift Detection in a Graph Stream Using a Discriminative Subgraph”, *In Proceedings of Student Research and Creative Inquiry, 2019*.
- Ramesh Paudel**, James Park, William Eberle , “Mining Heterogeneous Graph for Patterns and Anomalies”, *In Proceedings of Student Research & Creative Inquiry, 2018*.
- Ramesh Paudel** and William Eberle , “Mining Twitter Network for Interaction Patterns”, *In Proceedings of Student Research and Creative Inquiry, 2014*.
- Under Review **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*.
- Work in Progress **Ramesh Paudel**, William Eberle, “Graph Representation using Discriminative Shingle-based Sketching”, *Target: IEEE Transaction on Knowledge and Data Engineering*.
- Lauren Good, **Ramesh Paudel**, Gerald Gannod, and William Eberle, “Visualising Network Anomalies using Graph-based Technique”.

---

## 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, Tableau, Weka, Orange, Git/GitHub, Google Analytic, Rabbitmq, Jupyter
- Database MySql, Oracle, SQL Server
- Others Strong knowledge of Object Oriented Programming, Data Structures/Algorithms,

---

## PRESENTATIONS

**Research Presentation**, on *"Detecting DoS Attack in Smart Home IoT Devices"*, at the Graduate Student Seminar, Tennessee Tech University-2019.

**Research Paper Presentation**, *The Future Technology Conference*, CA, 2019.

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

**Research Poster Presentation**, *The 14th Annual Research and Creative Inquiry Day*, Tennessee Tech University, 2019.

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

**Research Poster Presentation**, *The 13th Annual Research and Creative Inquiry Day*, Tennessee Tech University, 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 32<sup>nd</sup> International FLAIRS Conference**, Sarasota, FL 2019.

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

**The 30<sup>th</sup> International FLAIRS Conference**, Sarasota, FL 2017.

---

## 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.

---

## PROJECTS

2019 **Predicting Highest Growth Customer.**

Use AI tools to segment customer in ways that can be useful for sales, product, and other teams and identify and predict high growth customers

**Prediction of Job Apply Rate for User Visiting Glassdoor.**

Predict the job apply rate for user visiting Glassdoor and performing a job search using Logistic Regression, ANN, Naive Bayes, Decision Tree, Random Forest, KNN, and Bagging.

2017 **Anomaly Detection in Opioid Prescription.**

Uses graph-based analysis of Medicare Part D prescriber summary data to look for anomalies and potential fraud scenarios in the relationships and transactions carried by prescriber.

**Analysis of Pattern Learning and Anomaly Detection on Streams.**

2014 **LINKCUBE: A Tool for Anomaly Detection in Social Network using GBAD.**

---

## OTHER EXPERIENCES

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

**Graduate Mentor**, Advising Master Student in a Project Work "Visualising Network Anomalies using Graph-based Technique", 2019.

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

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

---

## COMMUNITY SERVICES

**Volunteer**, ACM programming contest, Fall 2012.

**Volunteer**, ACM programming contest, Fall 2013.

---

## REFERENCES

**Dr. William Eberle**, PROFESSOR,  
Department of Computer Science,  
Tennessee Tech University.  
1 William L Jones Dr, Cookeville, TN 38505  
**Phone:** (931) 372-3278 **Email:** weberle@tntech.edu

**Dr. Gerald Gannod**, PROFESSOR,  
Department of Computer Science,  
Tennessee Tech University.  
1 William L Jones Dr, Cookeville, TN 38505  
**Phone:** (931) 372-3691 **Email:** jgannod@tntech.edu

**Dr. Doug Talbert**, PROFESSOR,  
Department of Computer Science,  
Tennessee Tech University.  
1 William L Jones Dr, Cookeville, TN 38505  
**Phone:** (931) 372-6178 **Email:** dtalbert@tntech.edu