KHEM NARAYAN POUDEL Murfreesboro, TN, 37130 | 801-712-7990 | knparjun @gmail.com | Website

Experienced Engineer/Scientist in Data Science and System Engineering, Computational Electromagnetics and Scientific Programming, Deep Learning Tools, Networking and Big data.

RESEARCH INTEREST

- Machine learning, algorithm design and signal processing
- High performance Computing
- Computational electromagnetics, RF and antenna design
- Wireless communication and networking
- Workflow optimization for big data applications

PROFESSIONAL SKILLS & CERTIFICATIONS

Data Science Tools: R, Python, Tableau, Power Bi, MSSQL, Hadoop, Cloudera, Pig, Hive, HBase, Git, HTML, Js, PHP, Java, ETL (Talend open Studio for data integration), MongoDB, Casandra,
Deep Learning Packages: TensorFlow, Keras, Maxnet, NLTK, ScikitLearn, NumPy, Pandas, SciPy,
RF Electromagnetics: CST Microwave studio, HFSS, FDTD , Comsol Multiphysics, Cadence, ADS, Meep,
RF Measurement Tools: Spectrum Analyzer, Network Analyzer, Oscilloscope, Signal Generator, Time Domain Spectroscopy,
Computational Tools: MATLAB, Mathematica, Maple 11, C, C++, Fortran, MPI, OPENMP, Cuda,
Networking Tools: CCNA, Packet Tracer, Firewall, Router, Switch

HADOOP Certification | Linked in Learning
Building Deep Learning with Keras and TensorFlow Certification | Linked in Learning and Udemy Lazy programmer
CCNA Certification | 2010
Advanced CISCO Routing | 2019 | Linked in Learning
Tableu | 2019 | Linked in Learning
Learning R | 2019 | Linked in Learning

EDUCATION

PhD in Computational Science | Middle Tennessee State University, TN (December 2019) GPA:4.0
Adviser: Dr. William Robertson
Project: Computational Modeling of Maximum Length Sequence grating and multilayer structures.
Co-Adviser: Dr. Yating Hu
Project: Implementation of Machine Learning approaches in Biomedical Signal Processing.
Co-Advisor: Dr. Yi Gu
Project: Time and Cost Optimization in Cloud Computing for Big Data Applications.
MS in Computer Science | Middle Tennessee State University, Murfreesboro, TN (2019) GPA:4.0
MS in Electrical and Computer Engineering | University of Utah, Salt Lake City, UT (2016)
MSC in Information and Communication Engineering | Tribhuvan University, Kathmandu (2013) GPA:4.0
BE in Electronics and Communication Engineering |Tribhuvan University (2010) GPA:4.0

EXPERIENCE

MIDDLE TENNESSEE STATE UNIVERSITY, MURFREESBORO, TN **January 2017- present**
Graduate Research Assistant

- Predictive modelling and data analytic in Second Harvest Project with MTSU Data Science Institute.
- Phonocardiography data compression using discrete wavelet transform, machine learning (TensorFlow).
- Work Flow Optimization of Cloud Computing for Big Data Applications using Java and python.
- Characterization of oils and oil mixtures using Terahertz Time-Domain Spectroscopy and Matlab.
- Computational modeling of maximum length sequence multilayer and grating structure using COMSOL.

Teaching Assistant

- Instructor for Astronomy Lab, Computer science orientation (HTML, CSS, JS, Microsoft Excel) and Computer Language Java, CSCI 3033.

UNIVERSITY OF UTAH, SALT LAKE CITY, UT **August 2014- January 2017**
Graduate Research/Teaching Assistant, Advanced antenna Lab

- Design of crime scene investigation system to investigate the wireless channel state information using CST.
- Single plane Transceiver arrays for Massive MIMO Communication using CST and Matlab.
- Teaching lab for Introduction to Electromagnetics and Transmission line, and supervising student on senior thesis.

TRIBHUWAN INTERNATIONAL AIRPORT, KTM, NEPAL **December 2006 – August 2014**
System Engineer

- Responsible for designing, installing, maintaining of networking (CISCO router, switch, firewalls).
- Analyze the traffic data using data visualization tools (R, Python, Tableau) and maintaining SQL Server.

- Responsible for designing, installing of RF devices and antennas for aviation communication system, and Radar for air traffic control system.

TRIBHUWAN UNIVERSITY, KTM, NEPAL **February 2010- August 2014**
Senior Lecturer and Academic Coordinator

- Conducting research and lecture class for electromagnetics, communication system, signal processing, propagation and antenna system, C, C++, computer network. CCNA instructor.

HONORS & PROFESSIONAL SOCIETIES

Reviewer

- ACM South East Conference, 2018
- The Second International Conference on Mechanical, Electric and Industrial Engineering (MEIE), 2019

Session chair, IEEE APS/URSI Conference, Atlanta, 2019
Graduate student advisory council member at University of Utah, Department of Electrical Engineering, 2015
Vice president, IEEE Utah student chapter, 2016
Full Tuition Waiver: Doctor of Philosophy/MS/B. E, 2005-2019
Travel Grant, Security Encryption Workshop, organized by Brown University, 2019
Undergraduate, 1st rank student among 2500 student, 2010

PUBLICATIONS

Referred Journals

J1. **K.N. Poudel** and William M. Robertson, "Maximum length sequence dielectric multilayer reflector," OSA Continuum 1, 358-372 (2018).

In Progress

J2. M. Chowdhury, **K. Poudel** and Y. Hu, "Time-Frequency Analysis and Classification of PCG Signals," IEEE Access 2019.
J3. **K. N. Poudel** and W. M. Robertson, "Bloch surface wave excitation using a maximum length sequence grating structure," IEEE Access, 2019.
J4. **K. N. Poudel** and M. Pant, "Design of Half Wavelength Rectenna for Biomedical Implants," IEEE Access, 2019.

Referred Conference Proceedings

C1. **K. N. Poudel**, D. Schurig and N. Patwari, "Spatial imaging using a communication system's channel state information," USNC-URSI Radio Science Meeting, Fajardo, 2016, pp. 41-42.
C2. **K. N. Poudel** and W. Robertson, "Metamaterial inspired antenna design for massive MIMO, 5G communications system," USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), San Diego, CA, 2017, pp. 103-104.
C3. **K. N. Poudel** and S. Gangaju, "Spectral Efficiency, Diversity Gain and Multiplexing Capacity Analysis for massive MIMO, 5G communications system," International Conference on Networking and Network Applications (NaNA), Kathmandu, 2017, pp. 133-137.
C4. **K. N. Poudel**, V. Koju and W. Robertson, "Frequency selective surfaces for microwave frequency band applications," USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), San Diego, CA, 2017, pp. 15-16.
C5. **K. N. Poudel** and W. M. Robertson, "Bloch surface wave excitation using a maximum length sequence grating structure," Proc. SPIE 10914, Optical Components and Materials XVI, 109140K, February 2019.
C6. M. Chowdhury, **K. Poudel** and Y. Hu, "Phonocardiography Data Compression using Discrete Wavelet Transform," IEEE Signal Processing in Medicine and Biology Symposium (SPMB), Philadelphia, PA, 2018.
C7. M. Chowdhury, **K. Poudel** and Y. Hu, "Automatic Phonocardiography Analysis using Discrete Wavelet Transform," International Conference on Vision, Image, and Signal Processing (ICVISP), Vancouver, Canada, 2019.

C8. **K. N. Poudel** and W. Robertson, "Characterization of Oils and Oil Mixtures using Terahertz Time-Domain Spectroscopy," USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), Atlanta, GA, 2019.
C9. **K. N. Poudel** and M. Pant, "Wireless Power Transfer for Medical Implants," USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), Atlanta, GA, 2019.
C10. M. Schmidt, **K. N. Poudel** and J. Wade, N. Sarkar, and M. Sarkar, "A simple Web Utility for Automatic Speech Quantification in Dyadic Reading Interaction," International Conference on Human-Computer Interaction, HCII, Vol 11591, Springer, Cham, 2019.

Conference Presentations

P1. **K. N. Poudel**, "Performance analysis of ATC radar using pulse compression techniques," KEC journal of science and engineering, June 2013, Vol.1
P2. **K. N. Poudel**, D. Schurig, and N.Patwari, "Security Imaging Using Wifi based Channel State Information," Annual Conference, Utah Academy of Science Arts and Letters, 2016, UT.
P3. **K. N. Poudel** and S. Pokhrel, "FDTD, A Powerful Tool in Computational Electromagnetics Annual Conference, Utah Academy of Science Arts and Letters, 2016, UT.
P4. **K. N. Poudel**, H. Matlock, and Z. Sinkala, Modeling T cell proliferation in response to lung cancer in mice," The 37Th Southeastern-Atlantic Regional Conference on Differential Equations (SEARCDE), Kennesaw, GA, 2017.
P5. **K. N. Poudel**, V. Koju and W. Robertson, "Maximum length sequence dielectric multilayer reflector using Rigorous Coupled Wave Analysis and FEM," USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), Boston, MA, 2018.
P6. **K. N. Poudel**, Y. Gu, "Time and Cost Optimization in Cloud Computing for Big Data Applications," ACM Mid-Southeast Conference, 2018.