CHETRAJ PANDEY

📍 Atlanta, Georgia — ✉ *cpandey1@gsu.edu*

 Github — Google Scholar — Linkedin — 🌐 Website (CV)

RESEARCH INTERESTS

Interpretable/Explainable Deep Learning, Multimodal Learning, and Spatiotemporal Modeling

EDUCATION

Georgia State University, Department of Computer Science, Atlanta, GA, USA　　　　*Jan 2021 - Present*
Ph.D. in Computer Science, Current CGPA: ***4.16*** */ 4.30*
Advised by: Dr. Berkay Aydin and Dr. Rafal A. Angryk

Tribhuvan University, Institute of Engineering (IOE), Dharan, Nepal　　　　*Nov 2013 - Aug 2017*
Bachelor's Degree in Computer Engineering, 75.64%, Dept. 2nd

SELECTED PUBLICATIONS

- **Pandey, C.**, Angryk, R.A., Aydin, B. (2023). Explaining Full-Disk Deep Learning Model for Solar Flare Prediction Using Attribution Methods. In European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases. ECML PKDD 2023, vol. 14175, pp. 72–89, 2023. [link]
- **Pandey, C.**, Ji, A., Nandakumar, T., Angryk, R.A., and Aydin, B. (2023). Exploring Deep Learning for Full-disk Solar Flare Prediction with Empirical Insights from Guided Grad-CAM Explanations. In: 10th IEEE International Conference on Data Science and Advanced Analytics (DSAA 2023), 2023. [link]
- **Pandey, C.**, Angryk, R. A., and Aydin, B. (2023). Unveiling the Potential of Deep Learning Models for Solar Flare Prediction in Near-Limb Regions. In: 22nd International Conference on Machine Learning and Applications (ICMLA), 2023. [link]
- **Pandey, C.**, Ji A., Angryk R.A., Georgoulis M.K., and Aydin B. (2022). Towards coupling full-disk and active region-based flare prediction for operational space weather forecasting. In: Frontiers in Astronomy and Space Sciences: Applications of Statistical Methods and Machine Learning in the Space Sciences, vol. 9, pp. 173-185, 2022. [link]
- **Pandey, C.**, Angryk, R. A., and Aydin, B. (2021). Solar flare forecasting with deep neural networks using compressed full-disk HMI magnetograms". In: 2021 IEEE International Conference on Big Data (IEEE Big Data), 1725–1730. [link]

WORK EXPERIENCE

Data Mining Lab, Georgia State University, Atlanta, GA, USA　　　　*Jan 2021 - Present*
Graduate Research Assistant

- Working in an interdisciplinary research laboratory, where I design and develop novel solutions to problems in space weather (prediction of transient and rare solar events) using machine learning, and explainable deep learning models.

Tribhuvan University, HCOE, Lalitpur, Nepal　　　　*April 2018 - December 2020*
Assistant Lecturer (Department of Electronics and Computer Engineering)

- Taught courses (Computer Programming, Discrete Structure, Numerical Methods, and Artificial intelligence) to undergraduate engineering students.
- Mentored final-year students' major projects.

SKILLS AND CERTIFICATIONS

Technical Skills:

- **Programming and Framework:** Python, C, C++, Matlab, Scikit-Learn, openCV, Pytorch, Tensorflow, Keras, Django.
- **Tools and Environments:** Git, Latex, Github, Jupyter, Docker, Google Cloud Platform, HPCE (SLURM).

Coursera Certifications:

- Neural Networks and Deep Learning, Issued Jul 2020. [certificate]
- Structuring Machine Learning Projects, Issued Oct 2020. [certificate]
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization, Issued Oct 2020. [certificate]

AWARDS

- **Early-career Travel Award** for EarthCube 2023: A Geoscience and Cyberinfrastructure Workshop. *June 27-28, 2023*
- Second Century Initiative (2CI) **University Doctoral Fellowship**, Georgia State University. *May 2021 - Aug 2022*
- **Full Governmental Scholarship on Merit** for the study of Bachelors in Computer Engineering at Tribhuvan University, Institute of Engineering, Dharan, Nepal. *Nov 2013 - Aug 2017*

RELEVANT GRADUATE COURSEWORK

Advanced Machine Learning (A+), Advanced Deep Learning (A), Advanced Data Mining (A), Advanced Topics in Deep Learning (A+), Digital Image Processing (A+), Computer Vision (A), Fundamentals of Data Science (A+), Database Systems (A).