PRAVAL SHARMA

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EDUCATION

University of Nebraska-Lincoln, USA *August 2019 - May 2024 (Expected)*
Ph.D. Computer Science
Research topic: Event Specific Spatial Information Extraction from Structured Text
Adviser: Dr. Ashok Samal and Dr. Leen-Kiat Soh

Mangalore University, India *August 2015 - July 2017*
M.Sc. Computer Science GPA: 9.03/10

Bangalore University, India *June 2011 - May 2014*
Bachelors of Computer Application GPA: 78.1/100

PUBLICATIONS

Sharma, P., Samal, A., Soh, LK., and Joshi, D. A spatially-aware data-driven approach to automatically geocoding non-gazetteer place names. ACM Transactions on Spatial Algorithms and Systems. 10 (1), (2024).

Sharma, P., Samal, A., Soh, LK., and Joshi, D. A spatially-aware algorithm for location extraction from structured documents. Geoinformatica 27, 645–679 (2023).

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, University of Nebraska-Lincoln, USA *August 2019 - Present*
My research is primarily focused on developing spatially-aware algorithms to extract event specific spatial information from text using spatial data mining and natural language processing techniques.

- Designed an automated pipeline to scrape news reports and store them in a database using web scrapers and cron jobs to create a large corpora of news reports ($\approx$ 5 million) from seven different newspapers (four national and three regional) from India.
- Trained and managed a team of four human coders for text annotation and developed a statistically reliable ground truth dataset to develop algorithms for location extraction and named entity recognition in text.
- Trained and led a team of five human coders for text annotation to develop a large statistically reliable ground truth dataset of 10,000 documents to develop algorithms for event-specific information extraction from text.
- Developed algorithms to extract event-specific information from structured text and published papers in journals as primary contributor.

Graduate Teaching Assistant, University of Nebraska-Lincoln, USA *August 2023 - Present*
Courses: Computer Vision, Data Structure and Algorithms

- Assisted students with their queries during office hours.
- Graded homeworks and projects for 30-50 students and provided detailed feedback.

Software Engineer, Javra Software, Nepal *January 2018 - May 2019*

- Developed modules for projects **XEPST** (a project management software) and **LMS** (leave management system) using **PROGRESS 4GL**, **HTML**, **Javascript**, and **CSS**.
- Worked on feature updates in the **X/Files** framework, an internal framework of the company on top of which software and web applications for clients are built.
- Worked on an extract, transform and load (ETL) tool development project using **Pentaho** and implemented OAuth 2.0 in the ETL tool for the company's client **Enza Zaden, Netherlands**.
- Implemented **Sticky Session** in the load balancer of the AWS server of Enza Zaden.

Software Engineer Intern, Leapfrog Technology, Inc., Nepal *October 2017 - December 2017*

- Designed Web pages for the company using **HTML**, **Javascript**, and **CSS**.
- Recreated popular small games (Ant Smasher, Flappy Bird) using JavaScript.

PROJECTS

Anticipating the Number of Social Unrest Event Using Spatial Models *March 2020-May 2020*
Developed an algorithm to predict the number of social unrest events in the state of Tamil Nadu in India utilizing predictor variables that denote the socio-demographic, economic, and climatology components of the study region using a spatial regression model. Used R.

Analysis of COVID-19 in New York State *March 2020-May 2020*
Analyzed the trend of spread of coronavirus based on factors such as population density and social vulnerability at county level in the state of New York from 03/01/2020 to 04/14/2020 and identified the hotspot regions using Getis-Ord Gi* statistic. Used ArcGIS Pro.

Deep Learning for Object Counting in Agriculture *October 2019-December 2019*
Developed a plant phenotyping algorithm using CNN to count the number of leaves in maize and sorghum plants. Used Python and Tensorflow.

Predictive Models for House Price Estimation: Data Mining Approach *January 2017-July 2017*
Developed an algorithm to estimate the price of house using machine learning models such as lasso regression and ridge regression. Used Python.

RESEARCH PRESENTATIONS

Seminar talk *July 2020*
SNR Summer Seminar Series, University of Nebraska-Lincoln
Topic: Anticipating the Number of Social Unrest Event Using Spatial Models.

Research demo and presentation *November 2019*
Graduate Information Day, University of Nebraska-Lincoln
Topic: Approaches for Extracting Journalistic 5Ws of Events Reported in Structured Documents.

OUTREACH ACTIVITIES

Student Panelist: Graduate Information Day, University of Nebraska-Lincoln *Spring 2023*
Discussed my experience as a graduate student and answered questions from prospective students.

Student Project Stakeholder: Senior Design Project, University of Nebraska-Lincoln *Fall 2021*
Drafted a project description document for development of a web application for map-based visualization of spatio-temporal information about events reported in news reports and guided a team of five students as the main point of contact during the development.

MENTORING

Undergraduates Ritvik Handa and Savan Patel, University of Nebraska-Lincoln *Fall 2020*
Undergraduates Pranav Nikam and Akshita Goel, University of Nebraska-Lincoln *Fall 2021, Spring 2022*

TECHNICAL SKILLS

Python, PyTorch, R, ArcGIS Pro, QGIS, HTML, CSS, JavaScript, PROGRESS 4GL, Bash, Git

AWARDS AND SCHOLARSHIPS

Graduate Research Asistantship, University of Nebraska-Lincoln, USA *2019 - Present*
Graduate Teaching Asistantship, University of Nebraska-Lincoln, USA *2023 - Present*
Nepal Bidhya Bhusan, Government of Nepal *2018*
Award conferred to Nepali citizens with outstanding performance in their graduate degree.
First Rank, Mangalore University *2018*
Award bestowed to students securing the highest grade in their department in the university.
Silver Jubilee Scholarship, Government of India *2015*
Scholarship covers the full cost of study for a graduate degree in India.

MEMBERSHIP

ACM