

# Gyanendra Shrestha

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Florida State University, 1017 Academic Way, Love Building, 0170 Tallahassee, FL 32304

## RESEARCH AREAS

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- **Data Management:** Large-scale Data Management, Data Fusion, Information Extraction (IE)
- **Artificial Intelligence (AI):** Large Language Models (LLMs), Deep Learning, Machine Learning

## EDUCATION

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- **Florida State University** 2021 - Present  
*M.S. and Ph.D. in Computer Science* Tallahassee, FL, USA  
Advisor: Dr. Michael Gubanov  
◦ GPA: 3.975/4.00
- **Tribhuvan University** 2013 - 2017  
*BE in Electronics and Communication Engineering* Kathmandu, Nepal  
◦ Grade: 76.09%

## EXPERIENCE

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- **Department of Computer Science, Florida State University** May 2021 - Present  
*Graduate Research Assistant* Tallahassee, FL, USA
  - Contributed to the development of machine learning and deep learning embedding models for tabular data understanding, focusing on improving table search and enabling data fusion
  - Gained hands-on experience with LLMs (GPT series, LLaMA, Mistral), **Retrieval-Augmented Generation (RAG)** strategies, **vector databases**, **Word2Vec** and **BERT** NLP embedding models
  - Published research in top-tier conferences such as **EDBT**, **IEEE ICDE** and **ACM SIGMOD**
- **Tekvortex Pvt. Ltd.** Jun 2020 - Dec 2020  
*Software Engineer* Lalitpur, Nepal
  - Developed backend (Python) modules for cloud migration assessment service
  - Fixed multiple production issues/bugs, reducing customer support tickets by 30% through collaborating with the Support Team
- **E&T Nepal Pvt. Ltd.** Jan 2018 - Feb 2020  
*Software Engineer* Bhaktapur, Nepal
  - Developed backend (C++) for automated 3D model recognition software
  - Relocated on-site to Japan (Core Concept Technologies Inc.) for 3 months to work closely with clients, accelerating project completion by 10% through direct collaboration and iterative feedback

## PROJECTS

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- **CancerKG** May 2023 - Present  
*Big Lab, Department of Computer Science, Florida State University* [\[GitHub\]](#)
  - Web-scale, trustworthy Knowledge Graph using embedding models on Cancer learned from millions of Web sources. The project is currently in progress.
- **Cloudchomp** Jun 2020 - Dec 2020  
*Tekvortex Pvt. Ltd* [\[GitHub\]](#)
  - An analytics tool to assist organizations in making data-driven decisions regarding the migration of resources from local private servers to AWS cloud.
- **Feature recognition of CAD data** Jan 2018 - Feb 2020  
*E&T Nepal Pvt. Ltd* [\[GitHub\]](#)
  - Automated 3D model recognition software for leading manufacturing industry in Japan. Collaborated with an expert team of Japan and Nepal to design software based on C++ using ACIS and spatial libraries from Spatial. The software's objectives included recognizing geometrical shapes, identifying parts in CAD data of pins, measuring their attributes (e.g., dimensions), and extracting text information using OCR (Tesseract, Leptonica).

## • Real Time Person Identification and Location Detection using Face Recognition

Jan 2015 - Dec 2016

Undergraduate Major Project



- Used Open CV library for image processing. Trained Haar Cascade Classifier for face detection and implemented PCA-LDA algorithm for face recognition.

## PUBLICATIONS

C=CONFERENCE, S=SUBMISSION UNDER REVIEW

- [C.1] **Gyanendra Shrestha**, Anna Pyayt, Michael Gubanov, "CONE: Embeddings for Complex Numerical Data Preserving Unit and Variable Semantics" (**to appear in ACM SIGMOD 2026**). [CORE A+ ranked]
- [C.2] Todor Ivanov, **Gyanendra Shrestha**, Karthik Vemireddy, Anna Pyayt, Michael Gubanov, "Hemolix.Extract.V: LLM-based Information Extraction for Documents with AI-based Plan Selection" (**to appear in ACM SIGMOD 2026**). [CORE A+ ranked]
- [C.3] Bhim Kandibedala\*, **Gyanendra Shrestha\***, Anna Pyayt, Todor Ivanov, Michael Gubanov, "Scalable Tabular Hierarchical Metadata Classification in Heterogeneous Structured Largescale Datasets using Contrastive Learning," In 2025 IEEE International Conference on Data Engineering (**ICDE 2025**). [\*co-first authors]
- [C.4] **Gyanendra Shrestha**, Chutian Jiang, Sai Akula, Vivek Yannam, Anna Pyayt, Michael Gubanov, "Tabular Embeddings for Generally Structured Tables with Bi-Dimensional Hierarchical Metadata and Nesting," In Proceedings of the 28th International Conference on Extending Database Technology (**EDBT 2025**). [CORE A ranked]
- [S.1] **Gyanendra Shrestha**, Sai Ganesh Akula, Todor Ivanov Anna Pyayt, Michael Gubanov, "Scalable Integration of Complex Tables with AI Optimizer".
- [S.2] **Gyanendra Shrestha**, Todor Ivanov, Chutian Jiang, Anna Pyayt, Michael Gubanov, "Scalable Information Extraction for Document Data Lakes".

## SKILLS

- **Languages/Database:** Python, C++, C, JavaScript, MySQL, MongoDB, AWS Athena
- **Libraries and Tools:** PyTorch, TensorFlow, Sklearn, Git
- **Cloud Technologies:** Amazon Web Services (AWS), Apache Spark

## HONORS AND AWARDS

- **Outstanding Research Assistant Award** 2024-2025  
*Department of Computer Science, Florida State University*
- **Nominated for Outstanding Teaching Assistant Award (OTAA)** 2023-2024  
*Center for the Advancement of Teaching, Florida State University*
- **Full Academic Scholarship for B.E.** Jan 2013  
*Ministry of General Affairs, Nepal*

## TEACHING EXPERIENCE

- **Graduate Teaching Assistant** Aug 2021 - May 2024  
*Department of Computer Science, Florida State University*
  - Graduate Teaching Assistant for courses including Unix Tools (COP4342), Operating Systems (COP4610), Introduction to Data Science (CAP5768), and Advanced Data Science (CAP5769)
  - Assisted in class to foster discussions and motivated students to ask questions
  - Created additional optional assignments and led practice sessions
  - Made sure the learning environment was inclusive, that everyone has the same opportunities to learn, ask questions and treated fairly and equally

## LEADERSHIP EXPERIENCE

- **President** Aug 2022 - Aug 2023  
*Nepalese Student Association at Florida State University*
  - Organized sports events, welcome programs, and cultural celebrations to promote community engagement
  - Provided guidance to prospective Nepalese students and assisted newly arrived students with their adjustment to life in Tallahassee
- **Core Member** Jun 2014 - Dec 2016  
*Robotics and Automation Center, Thapathali Campus*
  - Conducted training and workshop focusing on basic robotics and technology
  - Led a team to participate in Techfest 2015–2016 at IIT Bombay, India, and reached the final round of the *International Robotic Challenge*
  - Led a team to participate in KSHITIJ 2015 at IIT Kharagpur, India, and secured 2nd position in the event *Minefield*