

# KRISHNA PANTHI

[krishnapanthi.com](https://krishnapanthi.com) | [kpanthi@clemson.edu](mailto:kpanthi@clemson.edu) | [krishnapd133@gmail.com](mailto:krishnapd133@gmail.com) | +1 (864) 533-3441  
Linkedin: [linkedin.com/in/krishnapanthi](https://linkedin.com/in/krishnapanthi) | GitHub: [github.com/kp-square](https://github.com/kp-square)

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## EDUCATION

### Clemson University, South Carolina

Master of Science in Computer Science | Jan 2024 - Dec 2025 (Expected)

GPA: 3.87

*Concentration: Network, Systems and Security*

**Master's Thesis (in Progress):** Application of Deep Reinforcement Learning models for Irrigation Scheduling Optimization

Thesis Chair: Dr. Carlos Toxtli Hernandez

### Tribhuvan University, Nepal

Bachelor of Engineering in Computer Engineering | Sep 2016 - April 2021

**Undergraduate Thesis:** Tracking and Recognizing People Across Multiple Video Cameras

Thesis Chair: Dr. Ram Krishna Maharjan

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**TECHNICAL SKILLS:** Python, C#, C++, SQL, JavaScript/TypeScript, HTML/CSS, PyTorch, TensorFlow, Pandas, CUDA, Gymnasium, .NET Core, Angular, Vue.js, Flask, AWS (EC2, S3, Lambda), Docker, Git, Linux, Redis, Elasticsearch, GraphQL, Paraview, SIMD, IIS, Mixpanel

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## RESEARCH EXPERIENCE

**Research Assistant** | Clemson University | South Carolina | Jan 2024 - Present

- Using deep reinforcement learning to optimize irrigation scheduling in Cotton (Ongoing research).
  - Developed and evaluated deep learning based time series forecasting models including N-HiTS, PatchTST and TiDE with application in hydrology.
  - Implemented numerical solution for a non-linear differential equation - Richards' equation using Finite Difference Method and integrated it with crop growth simulation model Aquacrop.
  - Implemented Quantum Algorithm (QLSTM) for time series processing using PennyLane.
  - Contributed to development and organization of WaterSoftHack, a NSF funded cybertraining and hackathon involving 150+ participants. Prepared teaching materials on time series forecasting.
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# PROFESSIONAL EXPERIENCE

**Software Engineer** | MutualArt | Remote (Israel-based) | Nov 2021 - Dec 2023

- Architected and implemented comprehensive sales and marketing systems using .NET Core, GraphQL, SQL Server, and Vue.js resulting in over 200% improvement in responses and sales.
- Developed Cron Jobs to send automated notifications using Quartz.NET for background processing that tracked data and sent timely email notifications and reminders to users.
- Engineered containerization of 3 legacy applications to cloud native applications resulting in streamline deployment and easy migration across environments.
- Migrated an image processing pipeline from Python 2 to 3, resolving compatibility issues and improving I/O performance by 25%.
- Developed a prototype NER system using Python, spaCy, and GPT, achieving an accuracy of 90% in identifying key entities in unstructured text data.
- Served as an Assistant Team Lead, responsible for leading development calls and coordinating team efforts.

**Junior Software Engineer** | PensionPro | Harrisburg, PA | Apr 2021 - Jan 2022

- Re-engineered key features from a large-scale desktop application to a web-based solution using Angular, .NET Core and Microsoft Azure.
- Optimized database performance by integrating Redis caching, cutting query latency by over 25%.

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## PROJECTS

**Advanced Watermarking in Stable Diffusion Models** | <https://arxiv.org/abs/2501.08604>

Enhanced watermarking robustness in stable diffusion by implementing EDICT over Gaussian Shading, improving detection rates by 2% while maintaining image quality. Presented findings at a university research symposium, receiving recognition for innovative approach.

**GPU-Optimized Transformer Implementation** |

[krishnapanthi.com/projects/et-transformer-reproduction/](https://krishnapanthi.com/projects/et-transformer-reproduction/)

Reproduced and validated "E.T.: Re-Thinking Self-Attention for Transformers," achieving 85% of the paper's claimed GPU efficiency gains.

**Multi-Camera Person Tracking and Recognition System** | [github.com/kp-square/person-tracking](https://github.com/kp-square/person-tracking)

Engineered an end-to-end system for tracking and recognizing individuals across multiple camera feeds using Python, YOLOv4, and TensorFlow 2.x. Achieved 85% accuracy in person re-identification across non-overlapping camera views.

## PUBLICATIONS & PRESENTATIONS

**Krishna Panthi**, Vidya Samadi, Mostafa Saberian. **Oral presentation.** "Flood Gauge Height Prediction Using Advanced Deep Learning Approaches." *12th International Congress on Environmental Modelling and Software*, June 2024, East Lansing, MI.

**Krishna Panthi**, Vidya Samadi, Carlos Toxtli. **Poster presentation.** "Optimizing Irrigation for Cotton Crops using Deep Reinforcement Learning Algorithms." *American Geosciences Union's (AGU) General Assembly 2024*, Dec 2024, Washington DC, USA.

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## PROFESSIONAL AFFILIATIONS

- Member, Nepal Engineering Association
  - Member, American Geophysical Union
  - Member, European Geophysical Union
  - Member, IEMSS
  - Member, ACM
  - Member, ASABE
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## AWARDS AND ACCOLADES

- Scholarship awarded for top academic performance sem 1 and sem 3 during undergraduate
- Ranked 114/14000 in Nationwide Undergrad entrance exam
- Awarded 'Physics topper' in high school among 900 students
- Valedictorian, Arjun Boarding High School (10th grade, 2013)