

## Krishna Panthi

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### Education

Clemson University, South Carolina - Master of Science in Computer Science Jan 2024 - Dec 2025 (Expected)

Courses: Design and analysis of algorithms, Computer Security Principles, Matrix analysis, Cloud Computing, Parallel Programming, Data Science, ML based image generation, Scientific Visualization

Tribhuvan University, Nepal - Bachelor of Engineering in Computer Engineering

Sep 2016 - April 2021

### Technical Skills

**Languages:** Python, C#, C++, SQL, Javascript/Typescript, HTML/CSS

**Machine Learning:** PyTorch, Tensorflow, Pandas, spaCy, GPT API, Diffusion Models, Darts, CUDA, Gymnasium

**Cloud/DevOps:** AWS (EC2, S3, Lambda), Azure (Functions, App Service), Docker, Git, Linux

**Databases:** Relational Databases (MS SQL, MySQL), MongoDB, Redis, Elasticsearch

**Miscellaneous:** Open MPI, SIMD, IIS, Mixpanel, Angular, Vue.js, GraphQL, Paraview

### Experience

**Clemson University**, South Carolina - Research Assistant

Jan 2024 - Present

- Researching deep learning based time series forecasting and reinforcement learning using Python, PyTorch, Darts and Gymnasium.
- Led development of WaterSoftHack (NSF funded Learning and hackathon), coordinating 15 participants to solve water resource challenges.

**MutualArt**, Israel - Software Engineer

Nov 2021 - Dec 2023

- Designed sales and marketing systems using .NET Core, GraphQL, SQL Server, and Vue.js, resulting in an efficient workflow and over 200% improvement in responses and efficiency.
- Migrated ML tools from Python 2 to 3, resolving compatibility issues and improving I/O performance by 50%.
- Developed a prototype NER system using Python, spaCy, and GPT, achieving an accuracy of 95% in identifying key entities in unstructured text data.

**PensionPro**, Harrisburg, PA - Junior Software Engineer (via Dolphin Dive Technology)

Apr 2021 - Jan 2022

- Modernized a large desktop application to a web-based platform using Angular and .NET Core, improving accessibility and user experience for clients.
- Optimized database interactions with Redis caching on Azure, reducing latency by over 25%.

### Projects

**Watermarking in Stable Diffusion** | [krishnapanthi.com/projects/gaussian-shading-with-edict/](https://krishnapanthi.com/projects/gaussian-shading-with-edict/)

- Improved watermarking performance in stable diffusion by 2% implementing EDICT over Gaussian Shading.

**Optimized Transformer implementation in GPU** | [krishnapanthi.com/projects/et-transformer-reproduction/](https://krishnapanthi.com/projects/et-transformer-reproduction/)

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

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

- Developed a system for tracking and recognizing individuals across multiple cameras using Python, YOLOv4, and TensorFlow 2.x.

**AI that plays Minesweeper** | <https://github.com/kp-square/minesweeper-ai>

- Modeled the game as a Constraint Satisfaction problem (CSP) and solved it using backtracking.

### Conference Presentations

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