Krishna Panthi

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Experience

Clemson University - Graduate Research Assistant | Clemson, SC, USA Jan 2024 - Present

- Implemented different deep reinforcement learning algorithms such as DQN, PPO and model based techniques for resource optimization. Developed a gymnasium based RL environment to support data-parallel training.
- Implemented various timeseries forecasting models in PyTorch such as N-HiTS, PatchTST, LSTM and TiDE.
- Developed a numerical solution for a non-linear differential equation called Richards equation using the Finite Difference Method and Anderson acceleration for faster convergence.
- Implemented python code and performed large scale data processing with slurm on Palmetto Cluster.

MutualArt - Software Engineer | Remote (Kathmandu, Nepal) Feb 2022 - Dec 2023

- Built full stack web applications using Vue.js, .NET Core, SQL Server, GraphQL, Mixpanel and Elasticsearch for art-market products used by thousands of users.
- Developed Quartz.Net based schedulers for sending routine emails and performing recurring jobs.
- Developed image-processing and PDF processing workflows using Magick.Net and iTextSharp.
- Containerized legacy .NET applications with Docker, reducing deployment time and improving portability.
- Migrated a Python image-processing backend from Python 2 to 3 and refactored the core logic.
- Prototyped a NLP entity-extraction system using Python, spaCy and GPT API to convert unstructured text into structured records (90% precision in prototype).

Dolphin Dive Technology - Software Engineer | Kathmandu, Nepal April 2021 - Jan 2022

- Implemented custom Angular UI components, migrating business logic from WPF desktop app to web.
- Optimized database query latency via optimization of the stored procedures and integration of a Redis.

Education

Clemson University | Clemson, SC | MS in Computer Science | GPA: 3.87/4.0 May, 2026
Tribhuvan University | Kathmandu, Nepal | BE in Computer Engineering | GPA: 4.0/4.0 April, 2021

Selected Projects

- Developed an AI system for playing microsoft minesweeper taking screenshots and modeling the problem as a constraint satisfaction problem. The AI was able to win the expert level of the game.
- Fine tuned a 3.8B-parameter LLM using LoRA to generate domain names from business descriptions while safely rejecting unsafe content. Improved edge-case handling, achieving 95% accuracy in identifying safe descriptions

Publications

- **Panthi, K.** (2024). Watermarking in Diffusion Models with EDICT over Gaussian Shading. arXiv preprint arXiv:2501.08604.

Awards

- **IEMSS 2024 Conference Scholarship:** Recipient of international scholarship to attend and present at the International Environmental Modelling & Software Society conference (2024).
- **Undergraduate Academic Scholarship:** Awarded for outstanding academic performance (2017 & 2018).

Skills & Interests

Programming Languages: Python, C#, JavaScript/TypeScript, SQL, C++, HTML/CSS
Machine Learning & AI: PyTorch, TensorFlow, HuggingFace, Unsloth AI, LangChain, Gymnasium
Others: Git, Docker, AWS, Microsoft Azure, SQL Server, Redis, MongoDB, Vue.js, .Net Core