Nischal Neupane

 Enschede, Netherlands   neupanenischal1@gmail.com   (+31) 068 488 0710   nnischal.me in nneupane2

 lulrai

Experience

Alderon Games ☒
Machine Learning / Back-end Engineer

Remote (Australia)
Dec 2023 – Now

- Fine-tuned BERT-based models (110M/340M params) for toxicity detection at 10,000+ messages/min with 95% accuracy, 98% precision, and a 40% boost in moderation efficiency.
- Deployed the model via FastAPI + Celery, cutting average response times by 40% at peak loads of up to 50,000 requests/hour.
- Authored and maintained a comprehensive developer wiki using Vitepress, integrating advanced custom components and OAuth2 authentication, reducing onboarding times by 30% for new developers.
- Developed and deployed multiple applications leveraging the game's RCON protocol, automating over 500 daily support tasks and reducing manual workload by 50%.

ASML ☒
Machine Learning Engineer

Veldhoven, Netherlands
Apr 2023 – Dec 2023

- Built a GPT-based Transformer (encoder-only) on 1M+ Twinscan EUV logs spanning 10+ features, achieving 90% accuracy and 88% recall for next-error event prediction. Leveraged KNIME and Azure Databricks for data pre-processing and transformation.
- Applied Layerwise Relevance Propagation (LRP) to pinpoint root causes, cutting false positives by 15% and boosting diagnostic insights.
- Collaborated with stakeholders to transform the prototype into an internal product, demonstrating business value through a case study that highlighted a potential 25% reduction in unplanned maintenance downtime .

DEMCON Convergence ☒
Junior Software Engineer

Enschede, Netherlands
Feb 2022 – Feb 2023

- Developed front- / back-end solutions for embedded microfluidics with QML, C++, and JavaScript, reducing user configuration time by 30%.
- Automated hardware tests to reach 95% coverage, cutting manual testing by 40% and securing seamless real-time performance.
- Optimized communication between the embedded system and hardware components, improving data throughput by 25% while maintaining low-latency interactions critical for microfluidic device operations.

The Buckle Inc. ☒
Junior Data Scientist

Omaha, Nebraska, USA
Aug 2020 – Jun 2021

- Built a neural network for 50-dimensional product embeddings, increasing Click-Through Rates (CTR) by 12% and Average Order Value (AOV) by 9% for The Buckle's online storefront.
- Processed 1M+ transactions to deliver real-time, parameterized cart recommendations with sub-200ms latency, cutting manual intervention.
- Executed A/B testing on new recommendations, analyzing data from over 500k emails to determine optimal strategies that improved customer interactions and tripled click-through engagements during targeted marketing periods.

Skills and Interests

Languages: Python, JavaScript (React, Vue3, TypeScript), C++, C, Java, SQL

Technologies: FastAPI, Kubernetes (microk8s), Docker, MongoDB, RCON, Discord API, Prometheus, OpenAI Whisper/OpenAI GPT, PyTorch, KNIME, Azure Databricks, Git

Interests: Table Tennis, Weightlifting, Traveling

Projects

potbot [private repository]   Lurulai/potbot ⬀

- Created PotBot, a Discord bot for the game "Path of Titans," used by 200k+ users and generating $1k+ monthly revenue via Patreon.
- Designed a Kubernetes-deployed microservices architecture with HPA, scaling to handle 1M+ webhook requests daily with high reliability.
- Integrated RCON protocol for seamless game server communication, automated server moderation, and built a React dashboard with FastAPI backend for user management.
- *Tools/Languages Used: Python, TypeScript (React), FastAPI, RCON, Kubernetes (k8s), Discord API, Prometheus, Patreon API*

Synchronized Desktop Calendar   lulrai/assistant-gpt ⬀

- Developed Assistant-GPT, a Python-based voice assistant integrating speech recognition (Google, Whisper, Pocket-Sphinx) and text-to-speech (Coqui-Ai-TTS) engines, achieving 20% higher recognition accuracy compared to traditional systems.
- Built a modular command system supporting custom voice triggers and actions, improving user productivity by automating tasks such as querying ChatGPT, retrieving the current time, and sending iMessages on macOS.
- Implemented advanced features like ambient noise calibration and background listeners, enhancing speech recognition reliability and user experience by 30%.
- *Tools/Languages Used: Python (Pytorch), Whisper, Wit.ai, Pocketsphinx*

LoTRO Data Extractor   lulrai/bot-client ⬀

- Developed a character tracking system for "Lord of the Rings Online," integrating Python with a message queue, and a Discord bot. Enabled real-time updates for 1,000+ tracked characters, improving user engagement by 25% within the community.
- Reverse-engineered the game client using HexRays IDA and HexEdit to extract memory pointers, successfully retrieving critical in-game data such as character stats and assets, reducing manual data process by 90% and enabling advanced automation.
- *Tools/Languages Used: Python, HexRays IDA, HexEdit*

Education

MS	**University of Twente**, Data Science	Aug 2021 – Dec 2023
	• CGPA: 8.0/10.0	
BS	**University of Nebraska-Lincoln**, Computer Science, Mathematics	Aug 2017 – May 2021
	• CGPA: 9.4/10.0	

Publications

The Buckle: Product Recommendation Engine   May 2021

Jack Arens, Jacob Sullivan, ***Nischal Neupane***, Ray Huck, Joseph Carrigan

https://www.academia.edu/127321545/The_Buckle_Product_Recommendation_Engine ⬀