Vedasri Nakka

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Education

Joint Masters in Computer Science — GPA: 5.0/6.0
University of Neuchatel, Bern, Fribourg - Switzerland — Feb 2021 - Sep 2024

Bachelor's in Electronics Engineering — 73.0/100.0
BVRIT, Hyderabad, Jawaharlal Nehru Technological University - India — July 2013 - July 2016

Professional Experience

Cyient Private Limited — Aug 2016 - Aug 2019
Role: Software Engineer — Under: Shailesh Deshpande

- Engineered solutions to customize ServiceNow modules and expertly managed data loading through import sets. Integrated ServiceNow with external/internal tools, including JIRA and Netcool.

Technical projects

Thesis: Contrastive Learning for Character Detection in Ancient Greek Papyri — Feb 2024 - Sep 2024

- Evaluate the effectiveness of SimCLR for Greek letter recognition and compare its performance with traditional supervised models using cross-entropy and triplet loss functions, incorporating pretraining on a large dataset and fine-tuning on a smaller dataset. (You can find Publication and Code in the given link)
- Investigate the impact of various data augmentation strategies on SimCLR's performance and explore why traditional supervised models may outperform SimCLR in this specific letter recognition task.

Explainable AI - Human-Computer Interaction meets Artificial Intelligence — Feb 2021 - Jun 2021

- Conducted a study to interpret CNN decisions on the CUB200 dataset against adversarial attacks (FGSM, PGD)
- Implemented adversarial attack experiments on VGG16, Attention Pooling, and Prototypical Networks, using CAM techniques to explain attack success as detailed in the scientific article

Pattern Recognition — Feb 2021 - May 2021

- Implemented a k-NN algorithm from scratch for MNIST image classification using Euclidean and Manhattan distance metrics. Also developed a K-means clustering model, evaluating its performance with C-Index and Dunn-Index metrics.
- Trained a Multilayer Perceptron (MLP) with one hidden layer in PyTorch for for MNIST image classification, performed hyperparameter tuning through grid search for hidden layer neurons, learning rate, and training iterations.

Machine Learning & Data Mining, Fuzzy sets — Sep 2022 - Dec 2022

- Implemented various machine learning algorithms—including Naive Bayes, k-NN, Decision Tree, and Simple Rules—on the Titanic dataset for comprehensive analysis. Utilized Python for text data extraction and manipulation, conducting statistical tests and applying the Naive Bayes algorithm to enhance data analysis.
- Built a prototype app using fuzzy theory to recommend personalized travel destinations based on user preferences, enhancing the travel experience. Check travel recommendation prototype. — Sep 2023 - Dec 2023

Fine-Tuning GPT-2 for Text Generation on Custom Dataset — from Sep 2024

- Currently working on a project to fine-tune a GPT-2 model using Hugging Face Transformers for custom text generation. Managed data pre-processing, fine-tuning, and evaluation on a custom dataset while implementing dynamic padding, gradient clipping, and custom logging for enhanced training and monitoring.

Publications

A life engineering perspective on algorithms, AI, social media, and quantitative metrics — UniFr 2nd may 2024
Informatik Spektrum Journal — Georgiana Bigea, Maria Mumtaz, Edy Portmann, Jennifer Swaminathan & *Nakka Vedasri*

- As a team, we explored the intersection of life engineering, algorithms, AI, social media, and their impact on human life, through reviews of three influential books: Cathy O'Neil's *Weapons of Math Destruction*, Kate Crawford's *Atlas of AI*, Shoshana Zuboff's *The Age of Surveillance Capitalism*. You can find publication here

Skills

Languages: Python (NumPy, Pandas, Matplotlib, Scikit-learn, matplotlib, TensorFlow, PyTorch), Java Javascript, C, R
Softwares: Visual Studio, Eclipse, LATEX, Git, Anaconda(Jupyter Notebook), Microsoft Office
Soft Skills Academic writing, Time Management, Team work, Problem-solving, Documentation, Logical thinking.