Binay Kumar Pradhan

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ABOUT ME

Masters student majoring in AI. I expertise in MLOps, deep learning, NLP, and computer vision. As a Research Assistant at BTU, I work alongside other graduates creating solutions, optimize peers work, and contribute to research. Proficient in Python, TensorFlow, and AWS, I am passionate about research, applications and ethical implications of AI.

WORK EXPERIENCE

University research assistant

Brandenburgische Technische Universität, Cottbus-Senftenberg [Jun 2023 – Current]

City: Cottbus | **Country:** Germany | **Website:** https://www.b-tu.de/en/fg-neuroadaptive-hci/ | **Business or sector:** Human health and social work activities

- **Under the chair of Programming Language and Compiler Construction**
    - Tasked with managing database, fetching data points from test cases, creating a vizualizer tool with subroutine to JAVA.
    - Optimization of stockyard management time cost using reinforcement learning in contrast to constraint programming approach.
- **Under the chair of Neuroadaptive Labs Brain-Human Interactions**
    - Assisting a postdoctoral with her research in psychophysiological experiment of creating experiments, developing calibration paradigm and doing data analysis on EEG recording.
    - Development of a toolbox for real-time fixation detection and validation of eyetracker performance as part of my mandatory internship requirement

AI Data Engineer - II

Wolkus Technology Solutions Pvt Ltd [Jun 2022 – Sep 2022]

City: Bangalore | **Country:** India | **Website:** https://fasal.co/ | **Business or sector:** Agriculture, forestry and fishing

- Created ml training pipeline using Sagemaker's Pipeline and Migrated datamart from GCP to AWS
- Optimized lambda functions for production/QA environments with serverless framework
- Created a logger package to be used by the team and open-sourced it in PYPI server (https://pypi.org/project/fasal-logger/)

Software Engineer - II

Myelin Foundry Pvt Ltd [Oct 2021 – Mar 2022]

City: Bangalore | **Country:** India | **Website:** https://www.myelinfoundry.com/ | **Business or sector:** Professional, scientific and technical activities

Created features for in-car AI digital assistance like recognizing facial emotions, hand gestures performed inside the car and object detection using Mediapipe framework (Python/Android) and deployed it on edge device in form of an Android App.

Data Science Engineer

Utopia India Pvt Ltd [Jul 2019 – Oct 2021]

City: Bangalore | **Country:** India | **Website:** https://www.prometheusgroup.com/ | **Business or sector:** Professional, scientific and technical activities

- **4C (Data-Cleaning package) -** Text Cleaning and Structuring Package: Responsible for creating data apps for the clients to use the data-cleansing tool on their custom dataset, creating API modules for the 4C package, Identifying bottlenecks in the code architecture, integrating additional ml solutions to the data app on-demand, creating visualization to demonstrate capabilities of the tools to clients and providing quarterly KT to the team
- **Text Parsing and Information Extraction Tool** - Conceptualized reinforcement learning on text labeller that implemented feedback received from the team in real-time and demonstrated a proof-of-concept on the use case of Transformers with BERT and GPT language models for text generation of industrial equipment
- Developed a regex-based parser on top of ML parser along with a consensus algorithm to accurately extract information from text• Developed an embedding based entity mapping tool with spell correction and similar keyword extraction with 85% filling accuracy and 15x better performing than excel macros and rule-based tools
- Designed image matching algorithm using templates to segment text in the pdf and Integrated business rules for them
- Assessed using Jenkins as a CI/CD tool for the team and set up the testing pipelines for the data-cleansing tool
- Assisted in the configuration of AWS SPOT instances for multiple projects, load distribution on the development server and created scripts to automate data migration for maintaining it as Master Data
- Conducted a 5-weeks training session for cross-platform teams with a hands-on workshop on python along with a few data analysis libraries and ML algorithms

Machine Learning Intern

Utopia India Pvt Ltd [Jan 2019 – Jul 2019]

City: Bangalore | **Country:** India | **Website:** https://www.prometheusgroup.com/ | **Business or sector:** Professional, scientific and technical activities

- Developed a text-matching algorithm using a combination of pre-trained vectors with custom embeddings, fuzzy logic and set-relation techniques
- Developed a new data-driven algorithm for standardization and structuring of text labels and values
- Orchestrated the data cleansing tool using Makefile for batch file processing

Research Intern

Institute of Development and Research in Banking Technology [May 2018 – Jul 2018]

City: Hyderabad | **Country:** India | **Website:** https://www.idrbt.ac.in/ | **Business or sector:** Information and communication

- Scraped and labelled the Hindi and Bengali mixed-script dataset for training.
- Assisted a fellow scholar in solving an NLP problem of part-of-speech tagging for mixed-script social media texts and documenting the journal "Improving Code-mixed POS Tagging Using Code-mixed Embeddings"

EDUCATION AND TRAINING

Masters

Brandenburgische Technische Universität, Cottbus-Senftenberg, [14 Oct 2022 – Current]

City: Cottbus | **Country:** Germany | **Website:** https://www.b-tu.de/ | **Level in EQF:** EQF level 7

Bachelor of Technology

International Institute of Information Technology Bhubaneswar [8 Aug 2015 – 15 Jun 2019]

City: Bhubaneswar | **Country:** India | **Website:** https://www.iiit-bh.ac.in/ | **Final grade:** 2.8 | **Level in EQF:** EQF level 7 | **Thesis:** Unstructured text to Structured text mapping

LANGUAGE SKILLS

Mother tongue(s): Odia | Hindi

Other language(s):

English

LISTENING B2 **READING** B2 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

[2020]

Improving Code-mixed POS Tagging Using Code-mixed Embeddings

Assisted a PhD scholar on development of a novel approach for Part-of-Speech (POS) tagging of code-mixed social media text (e.g., Bengali-English, Hindi-English, Telugu-English), addressing challenges posed by limited labeled training data and out-of-vocabulary words.

S. Nagesh Bhattu, Satya Krishna Nunna, D. V. L. N. Somayajulu, and Binay Pradhan. 2020. Improving Code-mixed POS Tagging Using Code-mixed Embeddings. ACM Trans. Asian Low-Resour. Lang. Inf. Process. 19, 4, Article 50 (July 2020), 31 pages.