Astha Rastogi *Machine Learning Engineer*

asthar@bu.edu +1 (857) 867 6772 linkedin.com/in/astha-rastogi1

EDUCATION

M.Sc. Artificial Intelligence, *Boston University* Sep 2024 – May 2025
Boston, USA

- Relevant Coursework: Principles of Machine Learning, Introduction to Natural Language Processing, Artificial Intelligence, Computational Tools for Data Science, Advanced Topics in CS (Multimodal AI)
- Relevant Projects: Explainable Bias Detection in Text, Skin Cancer Detection using Multimodal AI

B.E. Electronics and Instrumentation, *BITS Pilani, Pilani Campus* 2018 – 2022
Pilani, India

- Bachelor's Thesis**:** Semi-supervised Event Extraction from Unstructured Data using Interactive Machine Learning and Machine Reading Comprehension.

PROFESSIONAL EXPERIENCE

Associate Machine Learning Engineer, *Exponentia AI* Oct 2023 – Jun 2024
Mumbai, India

- Developed an AI-powered B2B SaaS product to automate enterprise decision-making and streamline business operations.
- Built an **ETL pipeline in Databricks** to standardize MS Office documents, using vector databases to transform unstructured text into semantic embeddings for fast, accurate retrieval.
- Implemented a clustering algorithm to convert complex Excel workbooks into structured tables, enabling LLM integration.
- Deployed a **Retrieval-Augmented Generation (RAG) model**, reducing document search time by 30% and streamlining information retrieval across the company.
- Provided higher level of abstraction and modularity to the code enabling cross-platform deployment across cloud interfaces such as **AWS and Azure**, to expand client outreach.

Founding Software Engineer, *Design.AI* Jun 2022 – Sep 2023
Helsinki, Finland

- Developed an automated Figma plugin to ensure compliance with brand guidelines by **flagging and correcting UI/UX design inconsistencies in real-time.**
- Established an internal representation of UI components and **leveraged CNNs** and other deep learning architectures to map it to company UI kits, reducing company-specific guideline development time by 60%.
- Implemented guideline digitization by measuring semantic similarity of text using **NLP and clustering** for downstream tasks
- Applied **optimization techniques** for personalized design layouts, and integrated **computer vision models** like DeepGaze3 to enhance visual saliency.
- Developed the tool's UI to create an intuitive user-flow and calculated usage metrics using Django to generate insightful reports.

THESIS

Machine Learning Based Event Extraction from Unstructured Data for Carbon Calculation, *Bachelor's Thesis* Jul 2021 – Dec 2021

- Utilized **Interactive Machine Learning** and **Machine Reading Comprehension** to develop an innovative model for carbon emission calculation in recipes at the University of Manchester with Dr. Riza Batista-Navarro and Dr. Surekha Bhanot.
- Created a system that extracts events from unstructured data using a semi-supervised approach through a combination of **human-in-the-loop training** and **HDBScan clustering**, generating machine-readable event templates.
- Enhanced the system's performance by training models, such as **BERT and T5 transformers**, to ask relevant questions and refine event details, incorporating **POS tagging** to improve accuracy.

SKILLS

Languages
Python, C, C++, JavaScript, TypeScript, MATLAB, HTML, CSS, MySQL

Tools and Frameworks
Tensorflow, PyTorch, NLTK, HuggingFace, NumPy, Pandas, Scikit-Learn, Git, FastAPI, LangChain, ReactJS, Azure, AWS, SQL, Django, Databricks