

Shuvozit Ghose

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Summary

An Artificial Intelligent (AI) or Machine Learning (ML) engineer / Data Scientist with 5+ years of hands-on experience in machine learning research and development with publication at top conferences (like CVPR, ICCV, ICPR, ICASSP). My expertise encompasses a profound understanding of key machine learning or deep learning concepts, coupled with a comprehensive grasp of data preprocessing, model training, and effective deployment strategies. My practical work has spanned diverse machine-learning techniques, including prompt learning, Large language models (LLMs), graph neural networks, Transformers, graphical models, dimension reduction, clustering, classification, regression techniques, etc.

Education

Master of Science — ML Specialization

DGPA: 4.20/4.50

Thesis: CLIP for Point Cloud Understanding

Sept 2021 – Oct 2023

University of Manitoba, Canada

Bachelor of Technology — Computer Science and Engineering

DGPA: 8.87/10.

Aug 2016 – Aug 2020

West Bengal University of Technology, India

Technical Skills

Python | Pytorch | OpenAI | Large language models (LLMs) | Natural Language Processing (NLP) | Azure | Reinforcement Learning (RL) | Computational geometry | Computer Vision (CV) | Generative AI | Git | AWS | Microsoft Power BI | Financial Data | Docker | Kubernetes | Software Development Life Cycle | CI/CD | Tensorflow | OpenCV | SQL | Numpy | Panda | Java | C++ | C

Professional Experience

Machine Learning Software Engineer | Freelancer, Upwork, Fiverr

Nov 2023 – Now | Remote

- Spearheaded the Extraction, Loading, and Transformation processes for diverse datasets, facilitating the development of numerous machine learning applications.
- Engineered machine learning products tailored to specific financial data and business requirements across multiple projects.

Graduate Research Assistant | University of Manitoba

Sept 2021 – Oct 2023 | Canada

- Developed 3D Generative AI-based point cloud recognition model utilizing Large language models (LLMs) and image-based geometric deep learning models using Python and Pytorch.
- Developed point cloud classification model performing 3D shape analysis, topology analysis, view geometry analysis, functional mapping, and geometric deep learning.
- Developed Multi-modal deep learning for point cloud classification by connecting Large language models (LLMs) with image models.
- Computed inference using PyTorch on both CPU and GPU running CUDA 11.2 (@Acc > 90%).

Graduate Teaching Assistant | University of Manitoba

Sept 2021 – Oct 2023 | Canada

- Collaborated with the instructor and led the lab for undergraduate students for course Comp 2140 (data structure and algorithm using Java).
- Collaborated with the instructor and Graded courses COMP 4360 (machine learning using Python), COMP 2150 (object orientation using Java, C++, and Javascript), COMP 3350 (Software Engineering using Java and Android Studio), and COMP 3490 (Computer Graphics I using processing).

Research Intern | University of Surrey

June 2020 – Mar 2021 | UK

- Developed deep learning model for 2D image and text recognition exploiting neural network architectures, regularization techniques, learning techniques, loss functions, optimization strategies, etc using Python and PyTorch.
- Developed transformer-based 2D text image recognition model for handwriting and scene text recognition using TensorFlow.

Achievements

1. Awarded **University of Manitoba Graduate Fellowship (UMGF)** at the University of Manitoba 2022-2023.
2. Awarded **International Graduate Student Entrance Scholarship (IGSES)** at the University of Manitoba 2021.
3. Got NPTEL Elite Certification in Deep Learning for Visual Computing, 2018.

Certification

Big Data Hadoop by Omega Technologies

- Extracted raw e-commerce data from GitHub and stored it in Hadoop HDFS storage.
- Applied MapReduce for Parallel distributed processing of e-commerce data.
- Utilized Hive for querying and analyzing structured commerce data stored in HDFS.
- Utilized Pig for data processing tasks such as data cleaning, transformation, aggregation, and insights.

Notable Projects

2021 Tokyo Olympic data analytics in Microsoft Azure

- Extracted raw Tokyo Olympic data from GitHub using Azure Data Factory.
- Transformed raw data using Apache Pyspark in Azure Databricks and stored in Azure Data Lake Gen 2.
- Loaded transformed data in Azure Synapse Analytics and Visualized the results using Microsoft Power BI.

Design Personal Website using HTML, CSS, Javascript and AJAX (Demo)

- Designed Personal Website using HTML, CSS, Javascript, and AJAX
- Designed navigation header for the website and hosted on GitHub.
- Integrated Google Analytics for traffic analytics and management.

Publications

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| | Joint Visual Semantic Reasoning: Multi-Stage Decoder for Text Recognition | Oct 2021 |
| C7 | Ayan Kumar Bhunia, Aneeshan Sain, Amandeep Kumar, Shuvozit Ghose , Pinaki Nath Chowdhury, Yi-Zhe Song
<i>IEEE Conference on International Conference on Computer Vision (ICCV)</i> | PDF |
| | MetaHTR: Towards Writer-Adaptive Handwritten Text Recognition | June 2021 |
| C6 | Ayan Kumar Bhunia, Shuvozit Ghose , Amandeep Kumar, Pinaki Nath Chowdhury, Aneeshan Sain, Yi-Zhe Song
<i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> | PDF |
| | Modeling Extent-of-Texture Information for Ground Terrain Recognition | Sept 2020 |
| C5 | Shuvozit Ghose , Pinaki Nath Chowdhury, Partha Pratim Roy, Umapada Pal
<i>IEEE International Conference on Pattern Recognition (ICPR)</i> | PDF |
| | UDBNET: Unsupervised Document Binarization Network via Adversarial Game | Sept 2020 |
| C4 | Amandeep Kumar*, Shuvozit Ghose* , Pinaki Nath Chowdhury, Partha Pratim Roy, Umapada Pal
<i>IEEE International Conference on Pattern Recognition (ICPR)</i> | PDF |
| | Fractional Local Neighborhood Intensity Pattern for Image Retrieval using Genetic Algorithm | Sept 2020 |
| C3 | Shuvozit Ghose , Abhirup Das, Ayan Kumar Bhunia, Partha Pratim Roy
<i>Multimedia Tools and Applications</i> | PDF |
| | A Deep One-Shot Network for Query-based Logo Retrieval | July 2019 |
| C2 | Ayan Kumar Bhunia, Ankan Kumar Bhunia, Shuvozit Ghose , Abhirup Das, Partha Pratim Roy, Umapada Pal
<i>Pattern Recognition</i> | PDF |
| | User Constrained Thumbnail Generation Using Adaptive Convolutions | May 2019 |
| C1 | Perla Sai Raj Kishore, Ayan Kumar Bhunia, Shuvozit Ghose , Partha Pratim Roy
<i>International Conference on Acoustics, Speech, and Signal Processing (ICASSP)</i> | PDF |