

# SHUBHAM LOHIYA

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## EDUCATION

- Georgia Institute of Technology** Atlanta, GA, USA  
*Master of Science in Computer Science – Machine Learning Specialization, GPA: 4.0/4.0* Aug 2022 – May 2024
- **Key Coursework:** Limited Supervision in ML, Natural Language Processing, DL for Robotics, ML in Comp. Bio.
- Indian Institute of Technology Bombay** Mumbai, India  
*Bachelor of Technology in Mechanical Engg with Minors in CS and AI, GPA: 9.59/10.0* July 2018 – May 2022
- **Rank 1 – Institute Silver Medal; Institute Academic Prize** [2020, 2021, and 2022]
  - **Key Coursework:** Intelligent Agents, Digital Image Processing, Web Search and Text Mining, Algorithms, OS

## PROFESSIONAL EXPERIENCE

- Amazon | Applied Scientist Intern** Fall 2023  
*Building scalable **Multimodal** systems for **Automated Item Mapping** for Amazon's Product Catalog* Seattle, WA
- Leveraging **LoRA** fine-tuned **BLIP-2** with a **Flan-T5** language model for external catalog product matching
- Adobe | Machine Learning Engineer Intern** Summer 2023  
*Developed a **Generative AI** system for KPI-optimized **personalized marketing content*** San Jose, CA
- Fine-tuned **Llama2** via **RLHF** using a reward model that learns from past consumer-content interaction data
  - Designed an automatic qualitative evaluation protocol for generated marketing content using a **GPT-4** expert
- Anheuser-Busch InBev | Data Scientist Intern** Summer 2021  
*Engineered a ML Framework for Accounts Receivable **Forecasting**, delivering **\$40 million+** in working capital benefits*
- Developed trend and seasonal features from historical data, and data from Sales, Collections and the Economy
  - Trained ensembles of models like **ARIMAX**, **XGBoost**, **Random Forest**, and **MLP** achieving < **5%** dispersion

## RESEARCH EXPERIENCE

- Pathology Dynamics Lab | Graduate Research Assistant** Aug 2022 - May 2023  
*Guide: Prof. Cassie S. Mitchell, Department of Biomedical Engineering* Georgia Tech
- Document Filtering for Drug Repurposing and Clinical Meta-Analysis**
- Implemented a suite of **NLI-based Zero-shot Multi-label Classifiers** for a document classification benchmark
- Biomedical Entity Linking Survey**
- Conducted a comprehensive survey of BioEL models on a **new benchmark** of uniformly formatted datasets
- MARBLER: Multi-Agent RL Benchmark & Learning Env for the Robotarium** Spring 2023  
*An Open Platform for Standardized Evaluation of Multi-Robot Reinforcement Learning Algorithms* Georgia Tech
- Created an **open-source MRRL framework** enabling training in simulation and evaluation on physical robots
  - Benchmarked popular learning algorithms and included functionality for **rapid prototyping** of new experiments
- Joint Completion and Alignment of Multilingual Knowledge Graphs** Aug 2021 - July 2022  
*Bachelor's Thesis, Guide: Prof. Soumen Chakrabarti, Department of Computer Science* IIT Bombay
- **Problem Statement:** For multilingual KGs, **AlignKGC** attempts to study whether Knowledge Graph Completion or fact prediction adds valuable information for Relation Alignment and Entity Alignment tasks, and vice versa.
  - Developed AlignKGC, a new **SOTA framework** for joint completion and alignment of Multilingual KGs

## TECHNICAL SKILLS

**Programming Languages** Python, C++, Scala, SQL, HTML, CSS, JavaScript, Bash, R, MATLAB, Java  
**Technologies/Frameworks** PyTorch, TensorFlow, OpenCV, Docker, Git, Databricks, Spark, WandB, MLFlow

## SELECTED PUBLICATIONS AND PRE-PRINTS

1. **Joint Completion and Alignment of Multilingual Knowledge Graphs**, *accepted at EMNLP 2022*
2. **A Comprehensive Evaluation of Biomedical Entity Linking Models**, *accepted at EMNLP 2023*
3. **BioSift: A Dataset for Filtering Biomedical Abstracts for Drug Repurposing**, *accepted at SIGIR 2023*
4. **MARBLER: An Open Platform for Standardized Eval. of MRRL Algorithms**, *accepted at MRS 2023*

## ACHIEVEMENTS, AWARDS, AND EXTRA-CURRICULARS

- **Scholarships:** OPJEMS ('21); Narotam Sekhsaria Foundation: UG Engineering Scholarship, PG Scholarship ('22)
- **Winner of the Prospect 100 Global Tech Challenge** – a Covid-19 Hackathon judged by Steve Wozniak
- **Leadership:** Institute Secretary Technical Affairs – Electronics and Robotics Club, Student Mentor (IIT Bombay)