# Dhananjay Sharma

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## EDUCATION

**STONY BROOK UNIVERSITY**                                                                          **Stony Brook(USA)**
**Master of Science in Data Science (GPA**: 4.0/4.0)                                           *Aug 2024 – Present*
*Relevant Coursework: Probability, Data Analysis, Natural Language Processing, Data Management, Statistical Learning, Statistical Computing, Visualization*


**INDIAN INSTITUTE OF TECHNOLOGY**                                                                  **Dhanbad(India)**
**Integrated Master of Technology in Mathematics & Computing (GPA**: 3.95/4.0)              *Jul 2013 – May 2018*
*Key Courses: Statistical Inference(A+), Discrete Mathematics(A+), Linear Algebra(A), Advanced Numerical Methods(A+), Object Oriented Programming(A+), Language Processor(A+), Graph Theory(A+), Operating System(A+), Computer Organization(A+)*

## EXPERIENCE

**REGART (Intelligent Solutions for Regulatory Compliance)**                                      **Amsterdam**
*Full Stack Developer, Product Development*                                                   *March 2020 – May 2023*
- Led architecture design for a web app used by 500+ employees in European financial institutions, achieving 100% compliance with regulatory norms.
- Built data models for 1,000+ regulatory documents in JSON, streamlining storage and retrieval processes.
- Developed a version history feature for tracking amendments across 200+ articles, boosting UI navigation by 40%.
- Integrated 15+ APIs to enhance frontend-backend communication, reducing system response time by 30%.

**CGI (IT and Business Consulting Services)**                                                      **Bangalore(India)**
*Full Stack Developer, Product Software Development and Maintenance*                            *Aug 2018 – Aug 2019*
- Contributed to a web portal for 1,000+ finance executives trading spot, futures, forwards, and swaps with multi-currency support.
- Generated backend services for API data retrieval and live currency streaming, enhancing user experience.
- Designed PoC for a multi-window trading block swap function, increasing interface responsiveness by 20%
- Integrated 20+ frontend components using J2EE, Spring, Angular, and RESTful services, ensuring stable data flow.


## PROJECTS

*Online Travel Reservation System – Database Design & Implementation (Stony Brook University)*        *Aug 2024 – Dec 2024*
- Designed a relational database in MySQL to manage 10,000+ records (airlines, airports, flights) with optimized SQL queries.
- Created E-R diagrams, enforced referential integrity, and executed complex SQL transactions for bookings and auctions.
- Produced manager-level reports, customer management, and flight suggestions on SQL Server.

*Natural Language Processing – (Stony Brook University)*                                          *Aug 2024 – Dec 2024*
- **Distributional Word Vectors**: Implemented word vector construction using co-occurrence counts, IDF, and PMI from Wikipedia data, achieving improved word similarity correlations (e.g., MEN dataset ~0.22). Evaluated vectors with Spearman's rank and utilized sparse data structures for efficiency.
- **POS Tagging with Neural Networks**: Constructed a feed-forward neural network for POS tagging in tweets, incorporating word embeddings and custom features (e.g., capitalization). Integrated pre-trained embeddings, boosting accuracy to 81%, and used PyTorch for model training and optimization.
- **Pretrained Language Models for Sentence Classification**: Built a classifier with frozen BERT [CLS] features, achieving ~96.4% accuracy on DBpedia. Evaluated pooling techniques, fine-tuned BERT layers, and optimized classifiers using PyTorch and HuggingFace for improved performance.
- **Multilingual Document Summarization System**: Developed a multilingual summarization system using BART and PEGASUS, achieving ROUGE-1 (0.48, 0.44) and BLEU (0.38, 0.42). Built pipelines for preprocessing, translation, and evaluation, deploying a web application for accessible cross-lingual summarization and model comparison.

## TECHNICAL SKILLS

**Programming Languages**: Python, R, C++, SQL, Java, JavaScript, NodeJS, Typescript, HTML, SCSS, CSS
**Frameworks & Libraries:** React, Angular, D3.js, Springboot, Pandas, NumPy, PyTorch, TensorFlow, Scikit-Learn, Matplotlib
**Tools:** Kubernetes, Docker, AWS, Google Colab, Tableau, Hadoop-MapReduce, Spark, MySQL, PostgreSQL, MongoDB
**Certifications**: Angular-Java Spring Full Stack, Machine Learning Specialization, Natural Language Processing Specialization