

Divyanshu Raj

(+1) 623-206-5233 | divyanshuraj.6815@gmail.com | Tempe, Arizona, USA
[linkedin.com/in/divyanshu-raj](https://www.linkedin.com/in/divyanshu-raj) | divraz.github.io | medium.com/@divyanshu-raj

EDUCATION

Master of Science, Computer Science
Arizona State University, Tempe (USA)

Aug'22 – May'24

Bachelor of Technology, Information Technology
Indian Institute of Information Technology, India

Jul'13 – Jun'17

RESEARCH EXPERIENCE

Publications

- Paper Accepted at RSS'23: [Utilizing Language for Robot Learning: Language-Conditioned Change-Point Detection](#)
- Developed a novel approach for **identifying sub-tasks in robotics domains by leveraging natural language instructions** to map long trajectories to smaller trajectory fragments, achieving a 1.78% improvement over baseline methods through extensive experimentation. Paper: <https://arxiv.org/abs/2309.00743> (Ongoing Thesis)

Research/Teaching Assistant, Arizona State University, Tempe, USA

Aug'22 – Present

- Developed Q-Learning based algorithm for **autonomous driving** in a simulated environment. [Youtube](#)
- **Unsupervised data pruning**: Used clustering on sentence embeddings to prune datasets without significant loss in accuracy on text classification tasks. [GitHub](#)
- Leveraged LLMs for **enabling a robot to ask for human help** with natural language in a simulated [mini-grid environment](#).
- Experimented with **quantum machine learning** models for classification tasks with **pennylane**. [GitHub](#)

WORK EXPERIENCE

Amazon.com, Software Development Engineer Intern, Tempe, USA

May'23 – Aug'23

- Designed an event-driven Brand Customer Reviews (BCR) **auto reply architecture**, reducing OpenSearch query latency from 200ms to 2ms with AWS CICD pipeline.
- Orchestrated the **migration of the BCR architecture**, ensuring minimal disruption with a comprehensive **rollback plan**.
- Implemented BCR **auto reply with AWS services**, achieving a monthly cost savings of \$100k+ for over 1000 customers.
- Tech used: JAVA, AWS: CICD, SQS, S3 SNS, DynamoDB, Lambda, EC2, OpenSearch, Firehose Kinesis.

Streamoid Technologies, Bangalore, India

Software Development Engineer II

Jul'19 – Aug'22

- Spearheaded **semi-supervised classification**, **NER**, and text generation with transformers LLM for fashion (e-commerce).
- Designed an **automated system for training and deployment** of transformers models on GCP, accelerating experimentation and model training. Python, Docker, RabbitMQ, MongoDB, Sagemaker, GCP: Cloud Run
- Created an algorithm for contemporary **fashion trends detection** by extracting relevant information from fashion blogs and news using named entity recognition (NER) and applying various data analysis techniques. Python, NER

Software Development Engineer I

Jul'17 – Jun'19

- Designed and implemented a real-time, event-driven **data processing pipeline**, using a push-based architecture, achieving a 20% performance boost and reducing costs by 40%. Python, RabbitMQ, GCP: Docker, Kubernetes, Cloud Run
- Developed a scalable **data ingestion pipeline**, using the API first approach reducing operational load by 90% and increasing data ingestion speed by 20% for all the clients. Python, FastAPI, Docker, GCP: datastore, cloud run
- Established a robust infrastructure for daily **web crawling** of fashion e-commerce websites, blogs, and news sources, enabling data collection amounting to over 100 million products over 3 years. Python, Docker, Selenium

SKILLS

Python PyTorch Keras Docker Kubernetes AWS GCP Deep Learning Reinforcement Learning NLP Time Series Analysis AWS Sagemaker AutoML NLP Transformers LSTM RNN Scikit Learn Data Processing

ACTIVITIES & ACHIEVEMENTS

- Writer for “**Towards Data Science**” and “**Analytics Vidhya**” on medium. Several articles have been published with them.
- All India ranked **193 in ACM ICPC 2014** competitive coding competition, Asia, Amritapuri site online round.
- Actively **trained colleagues** on applied deep learning and machine learning operations.
- **Teaching assistant** in “perception in robotics” grad course, and “data structures and algorithms” undergraduate course.