

# Dhruvil Kamleshkumar Kotecha

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## Professional Summary:

Software Developer with experience in ML, NLP, and backend development. Proven expertise in building scalable systems for anomaly detection using deep learning models. Skilled in software development with a strong foundation in data structures, algorithms, and software engineering best practices. Experienced in deploying ML models, automating data pipelines, and working with large-scale log data. Passionate about solving real-world problems through efficient, production-ready solutions and collaborating in agile teams.

## Work Experience:

### Software Developer Co-op

May 2023 – Aug 2024

#### Ericsson Canada Inc.

- Developed NLP-based anomaly detection models for radio logs using fine-tuned HuggingFace Transformers, BERT, GPT-2, LLaMA-3 and log parsers (Drain, Brain), improving root cause identification accuracy.
- Designed scalable, modular ML pipelines with PyTorch, TensorFlow, and scikit-learn for static and time-series anomaly detection using Autoencoders, Isolation Forest, GNNs, and One-Class SVM.
- Engineered and deployed a web-based debugging system using FastAPI (Python), Node.js, and React (TypeScript), enhancing log analysis throughput by 40%.
- Managed model evaluation, deployment, and monitoring using Argo Workflows, Docker, AWS S3, and OpenSearch; integrated Kibana dashboards for real-time visualization.
- Streamlined ETL processes and automated log data preprocessing with multiprocessing and CLI tools, reducing manual data handling by 80%.
- Contributed to CI/CD infrastructure with GitLab CI, GitHub Actions, and JFrog Artifactory; ensured rapid delivery through agile development and rigorous code reviews.

## Skills:

- **Programming Languages:** Python, SQL, Java, C++, Bash, JavaScript
- **Developer Tools:** Git, GitHub, GitLab, VS Code, FastAPI, REST APIs, Bash CLI, Linux
- **Software Practices:** Agile Development, CI/CD, Modular ML Pipelines, Automation of Developer Workflows
- **Cloud & Automation:** Google Cloud Platform, Argo Workflow, Kafka, AWS, Docker, JFrog Artifactory, GitHub Actions

## Education:

### McMaster University

Sep 2022 – Sep 2024

Master of Engineering in Electrical and Computer Engineering | GPA: 3.94/4.00

### Gujarat Technological University

Sep 2017 – Sep 2021

Bachelor of Technology in Computer Engineering | GPA: 9.87/10

## Project:

### Subjective Answer Evaluation and Analysis:

- Built an automated NLP system using deep learning to evaluate subjective answers against model responses.
- Designed text preprocessing pipelines (tokenization, lemmatization, stopword removal) for input standardization.
- Applied semantic similarity, syntactic parsing, and NER to assess grammatical and contextual accuracy.
- Used cosine similarity, Word2Vec, and TF-IDF to compute answer similarity, achieving 85% accuracy.
- Added spelling correction and synonym handling using spaCy, NLTK, Gensim, and pypellchecker.

### Document Scanner with OCR:

- Built a document scanner using image processing to detect, extract, and enhance scanned documents.
- Applied contour detection and four-point transform for perspective correction on skewed images.
- Used adaptive thresholding and preprocessing to boost OCR accuracy with Tesseract.

- Enabled automated scanning and text extraction via CLI with image-saving functionality.
- Technologies used: Python, OpenCV, NumPy, Tesseract OCR, PIL.

#### **Geospatial Analysis of Accumulated Precipitation:**

- Analyzed precipitation patterns using GeoTIFF files and spatial data techniques for agricultural and environmental insights.
- Visualized regional trends with Power BI and developed statistical models to detect anomalies and seasonal shifts.
- Used Python libraries like rasterio and geopandas for geospatial data processing.

#### **Certifications / Courses:**

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##### **Algorithms Specialization Certificate | Stanford Online**

- Developed an advanced understanding of algorithms and data structures by completing four courses in this area.
- Studied general algorithm design paradigms and their applications, including divide-and-conquer, greedy methods, and dynamic programming and how to use data structures to optimize the overall cost of the algorithms.

##### **Natural Language Processing in Microsoft Azure**

- Gained the knowledge of how to use the Text Analytics service for natural language processing of raw text for sentiment analysis, key phrase extraction, named entity recognition, and language detection.

##### **Machine Learning with Python | IBM**

- Implemented linear classification methods including multiclass prediction, support vector machines, logistic regression, K-Nearest neighbors (KNN), decision trees, and different types of clustering models using NumPy, SciPy and scikit-learn.

#### **Leadership and Extracurricular Activities:**

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- **Coordinator & Lead**, Computer Society of India (CSI) – Student Branch June 2020 – June 2021  
Led student chapter initiatives, organized technical events, and managed cross-functional student teams.
- **Event Manager**, Computer Society of India (CSI) – Student Branch June 2019 – June 2020  
Coordinated logistics, communications, and participant engagement for society events.
- **Organizing Team Lead**, Computer Symposium 2021 (CSI & IEEE Joint Event) April 2021 – April 2021  
Oversaw event planning, volunteer coordination, and program execution for a 100+ attendee technical symposium.
- **Student Coordinator**, National Webinar on ASP.NET Core – CSI June 2020 – June 2020  
Managed outreach, registrations, and session moderation for a nationwide webinar.