Kartik **Sirwani**

LEAD DATA SCIENTIST

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Summary

Lead Data Scientist with 8+ years of experience specializing in NLP, Computer Vision, and predictive modeling. Proven expertise in developing and deploying deep learning models, including FBA Matting for background removal, mask detection systems, and document analysis tools. Skilled in building scalable APIs and micro-services, mentoring teams, and translating state-of-the-art research into impactful, production-ready solutions.

Skills

Languages and Technologies

- DataScience : Python, NLTK, PyTorch, OpenCv, Pillow, TensorFlow, Pandas, scikit-learn, Matplotlib
- Languages : Python
- OS : Windows, Linux, Mac
- Cloud : ECS, Lambda, CloudWatch, Autoscaling, Route53, EC2, SQS, S3, LoadBalancer
- Databases : MongoDB, SQL

Work Experience

Cimpress

LEAD DATA SCIENTIST — *Sept 2020 - July 2024*

- **Background Removal API** :
  Led development of a high-volume background removal API for **backgroundly.io**, handling 200,000+ daily requests and saving $3M annually.
  Engineered and trained state-of-the-art **FBA-Matting** and U-Net models, achieving an 87 percent visual acceptance rate in saliency detection.
  Technologies: python, pytorch, opencv
- **Create Portrait API** :
  Developed an API to transform regular photos into portrait-style images by maintaining subject focus and subtly blurring the background.
  Integrated open-source **MegaDepth model** with in-house background removal services.
  Technologies: Python, PyTorch, OpenCV, Pillow.

Foghorn Systems

DATA SCIENTIST — *Feb 2020 - Sept 2020*

- **Mask Detection Model**:
  Developed and deployed a Mask Detection Model to identify individuals not wearing masks in factories during the COVID-19 pandemic, triggering real-time alerts when counts exceeded thresholds via IIoT.
  Trained an **SSD MobileNet V2** object-detection model, achieving 85% precision.
  Technologies: Python, TensorFlow, OpenCV.
- **Connector Detection Model**:
  Developed a model to identify pipe connectors in oil factories, preventing drilling in unsafe areas.
  Trained a **YOLO v3** object-detection model, achieving 88% precision.
  Technologies: Python, TensorFlow, OpenCV.

Razorthink

SENIOR ARTIFICIAL INTELLIGENCE ENGINEER — *Sept 2018 - Dec 2019*

- **Table Detection Model**: Developed a deep learning model to detect table-like structures in PDF documents.
  Trained a Faster R-CNN (VGG16) network using curriculum learning, achieving 84% precision.
  Technologies: Python, TensorFlow, OpenCV.
- **Template Detection Service**: Developed a service to compare the layout and structure of PDF documents, classifying similar documents under the same template.
  Built and trained a Siamese network using a pre-trained VGG16 model.
  Technologies: Python, TensorFlow, OpenCV, MongoDB.

Nowfloats

BACKEND DEVELOPER *June 2016 - Sept 2018*

- **Update Synchronize API**: Developed an API to synchronize merchant updates and reviews across social platforms like Facebook, LinkedIn, Twitter, and Quikr, serving over 19,000 customers and processing 50,000 weekly updates.
  Built REST APIs, services, Lambda functions, cron jobs, and created deployment pipelines on ECS.
  Technologies: Python, NodeJS, ECS, Docker, Lambda, Express, MongoDB, Route 53, Ubuntu, SQS.
- **Update Categorization Service**: Designed a service to fetch and categorize customer product updates into offers, discounts, or sale prices using natural language processing algorithms such as 'bag of words' and an SVC (Support Vector Classifier).
  Technologies: Python, Scikit-Learn, Pandas, Matplotlib, MongoDB, MySQL.
- **Purchase Probability Model**: Created a model to analyze sales data and predict purchase probabilities based on customer characteristics, reducing acquisition costs by 50% and increasing conversion rates from under 2% to 20%.
  Trained classifiers using logistic regression and decision trees.
  Technologies: Python, Scikit-Learn, Pandas, Matplotlib, MongoDB.

Education

University of British Columbia, Vancouver

Vancouver, Canada

MASTER OF DATA SCIENCE IN COMPUTATIONAL LINGUISTICS *Aug 2024 - June 2025*

Courses:- Computational Semantics, Advanced Corpus Linguistics, Sentiment Analysis, Machine Translation

Birla Institute of Technology and Science, Pilani

Pilani, India

B.PHARM. PRE-PHARMACY STUDIES *2012 - 2016*

Professional Courses

Nov 2020 **Deep Neural Networks with PyTorch**, IBM
Nov 2017 **Applied Machine Learning in Python**, University of Michigan on Coursera
Oct 2017 **Applied Plotting, Charting and Data Representation in Python**, University of Michigan on Coursera
Sept 2017 **Introduction to Data Science in Python**, University of Michigan on Coursera