

# Kartik Sirwani

## LEAD DATA SCIENTIST

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## Summary

Currently serving as the Lead Data Scientist at Cimpres, a product-oriented multinational corporation, with a total of 8 years of professional experience, including 5.5 years in data science. Experienced in building complex deep learning and machine learning models to solve complex problems and use cases.

## 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

### Cimpres

Bengaluru

LEAD DATA SCIENTIST

Sept 2020 - Present

- **Background Removal API** : This API (used in web tool backgroundly) removes backgrounds from customer-uploaded images and leaves only the salient content in the image. This tool processes approximately 200,000 daily requests for custom image engraving services on products like mugs and t-shirts, saving about 3 million USD annually. In this project, I led the development and training of the state-of-the-art fba-matting algorithm and trained a U-Net model for accurate saliency detection, achieving a visual acceptance rate of 87 percent. Technologies Used: python, pytorch, opencv
- **Create Portrait API** : This api imparts a portrait photo effect to regular photographs, i.e., the main subject(s) is maintained in sharp focus, and at the same time, the background is gently blurred to add depth and aesthetic appeal to the photograph. In this project, I combined the open-source mega-depth model with in-house background removal service. Technologies Used: python, pytorch, opencv, pillow

### Foghorn Systems

Pune

DATA SCIENTIST

Feb 2020 - Sept 2020

- **Mask Detection Model** : This model is responsible for identifying individuals not wearing masks. It was deployed in factories (using IIOT) and real-time alerts were sent when the count exceeded a predefined threshold during the COVID-19 pandemic. I trained a SSD mobilenet v2 object-detection model and achieved a precision of 85 percent. Technologies Used: python, tensorflow, opencv
- **Connector Detection Model**: This model identifies pipe connectors in oil factories, to prevent drilling in unsafe areas. I trained a YOLO v3 object-detection model and achieved a precision of 88 percent. Technologies Used: python, tensorflow, opencv

### Razorthink

Bengaluru

SENIOR ARTIFICIAL INTELLIGENCE ENGINEER

Sept 2018 - Dec 2019

- **Table Detection Model**: This deep learning model is used to detect table-like structures in a pdf document. I trained a Faster Rcnn (VGG16) network on pdf documents using the concept of curriculum learning. Achieved a precision of 84 percent. Technologies Used: python, tensorflow, opencv
- **Template Detection Service**: This service compares the layout and structure of two PDF documents. If they are found to be similar, they are categorized under the same class or 'template'. To accomplish this, I built and trained a Siamese network utilizing a pre-trained VGG16 net. Technologies Used: python, tensorflow, opencv, MongoDB

### Nowfloats

Hyderabad

BACKEND DEVELOPER

June 2016 - Sept 2018

- **Update Synchronize API**: This API synchronizes merchant updates and reviews across various social platforms such as Facebook, LinkedIn, Twitter, and Quikr. The API is used by over 19,000 customers and handles around 50,000 updates on a weekly basis. I made REST APIs, services, lambda functions, cron jobs and created deployment pipeline on ECS. Technologies Used: Python, NodeJs, ECS, Docker, Lambda, Express, MongoDB, Route 53, Ubuntu, SQS, Python
- **Update Categorization Service**: This service fetches all the product updates made by the customers on their websites and then categorizes them into either offers, discounts, or sale price. I used natural language processing models such as 'bag of keywords' to classify the updates into categories. Technologies Used: Python, Scikit Learn, Pandas, Matplotlib, MongoDB, MySQL
- **Purchase Probability Model**: This model analyses sales data to predict probability of purchase based on customer characteristics. It helped reduce the customer acquisition cost by 50 percent and increased the conversion rate from under 2 to 20 percent. I trained the classifier using logistic regression and decision trees. Technologies Used: Python, Scikit Learn, Pandas, Matplotlib, MongoDB

## Professional Courses

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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

## Education

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### University of British Columbia, Vancouver

MASTER OF DATA SCIENCE

*Vancouver, Canada*

*Aug 2024 - June 2025*

### Birla Institute of Technology and Science, Pilani

B.PHARM. PRE-PHARMACY STUDIES

*Pilani, India*

*2012 - 2016*