Reetika Gautam

Masters in Computer Vision – Université de Bourgogne (France)
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About Me

Highly motivated and self-taught computer vision and deep learning enthusiast, with a passion for implementing state-of-the-art models and algorithms. A hardworking and dedicated individual who excels at independent work and has a strong aptitude for fast learning.

Skills

Analytical Tools	Tableau, Google Analytics, Google Colab, PyTorch, LaTeX
Languages	C, Python, R, SQL, Java, PHP, Javascript, HTML
Analytical Skills	Statistics, Image Processing, Data Visualization,3D Reconstruction, Machine Learning, ROS

Work Experience

SurgAR
Assistant Research Engineer Intern — Clermont- Ferrand, FR (Feb 2023 - Present)

- Worked on a deep learning-based liver segmentation system using the CosNet model, to improve state-of-the-art results for unsupervised video object segmentation.
- Proposed and implemented a novel method for selecting keyframes in video summarization, based on visual content and semantic relevance, resulting in more informative and diverse video summaries.

Tata Consultancy Services
Assistant System Engineer — Kolkata, IN (Aug 2019 - Aug 2021)

- Built Visa Approval predictive model to classify applications in 3 categories based on chances of approval high, medium, and low achieving a 92% accuracy.
- Enabled a client to analyze patterns in financial transactions by building a Python module to aggregate data, and create summary statistics and visualizations.

FASY Solutions
Data Science Intern — Mumbai, IN (Feb 2019 - July 2019)

- Involved in Anomaly Detection on the supply chain dataset of a firm in the logistics domain. Used statistical analysis and time series modeling to detect anomaly and forecast loss of resources for the company.
- Extracted, interpreted and analyzed data to identify KPIs for the website and increased lead acquisition rate by over 28% for the 4th quarter.

Competitions and Personal Projects

Retinal Blood Vessel Segmentation (VIBOT Le Creusot FR, March 2022)

- Successfully applied classical image processing techniques to segment retinal blood vessels, achieving high accuracy and sensitivity in detecting vessel pixels. It achieved an accuracy of 89.9%, a sensitivity of 88.2, and a specificity of 91.3% EyePACS-1 data set with a confidence index of 95%.
- Developed and implemented a pipeline for retinal image pre-processing, including denoising and contrast enhancement, which improved the performance of the vessel segmentation algorithm.

A Perception-Driven Visual Servoing System (VIBOT Le Creusot FR, Dec 2022)

- Designed and implemented a visual servoing system using the Turtlebot platform and a Ueye camera as the fixed servoing camera, achieving precise manipulation of objects in an eye to hand and eye in hand configuration.

Road Plane Extraction From Stereo Images (VIBOT Le Creusot FR, April 2022)

- The first method involved creating a region of interest (ROI) and applying the Hough transform to detect the road accurately. This method demonstrated good results in identifying the road plane in stereo images.
- The second method utilized the Homography matrix to remove the common parts from the stereo images, which allowed for more precise detection of the road plane. The internal parameters of the camera were known, which enabled accurate extraction of the road plane.

Education

Université de Bourgogne Le Creusot, FR (2021–Present)

- Masters in Computer Vision(VIBOT)
- Honors: Awarded EIPHI Scholarship for 2021-2023 year

Netaji Subhash Engineering College Kolkata, IN (2015–2019)

- Bachelor Of Technology in Information Technology
- Cummulative Average: 83%