

Kailash Hambarde

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Profile

I am a Postdoctoral Researcher at the [University of Beira Interior \(UBI\)](#), supervised by [Prof. Hugo Proença](#). I hold a Ph.D. in Computer Science from [Swami Ramanand Teerth Marathwada University](#), where I focused on machine learning. My career includes roles as a Postdoctoral Researcher in Portugal and a Thesis Supervisor at [Liverpool John Moores University](#). Previously, I was a Senior Data Scientist at [Calance U.S.](#). At [NDS InfoServ](#) in Mumbai, I specialized in object detection and OCR applications. I also have experience as a Data Analyst at [IIT Madras](#), working on commodity price forecasting. Earlier, I contributed to a crime hotspot detection project using GIS and machine learning at [SRTM University Nanded](#).

Areas of Expertise

Machine Learning - Data Science - Artificial Intelligence - Object Detection - OCR Applications - Image Processing - Pattern Recognition.

Professional Experience

Postdoctoral Researcher ([University of Beira Interior](#)) **Covilhã, Portugal** 10/2024 - present

- Contributed to project management and developing a prototype for fabric defect detection, funded by **Portugal Recovery and Resilience Plan (PRR)**.
- Currently serving as a project coordinator for biometric recognition at extreme ranges, collaborating with 6 international universities.

Researcher ([University of Beira Interior](#)) **Covilhã, Portugal** 09/2022 - 10/2023

- Developed and implemented NLP models to process and extract relevant information from clinical trial documents **Funded by "FEDER, Fundo de Coesão e Fundo Social Europeu", in the scope of the PT2020 - Portugal 2020 program.**

Senior Data Scientist Consultant ([Calance](#)) **Gurugram, India** 03/2022 - 03/2023

- Clinical Trials Management: Developed and implemented NLP models to process and extract relevant information from clinical trial documents.

Data Scientist [NDS InfoServ](#) **Mumbai, India** 03/2019 - 02/2022

- Led the integration of AI tools like Python, TensorFlow, PyTorch, Keras, Azure, Git, and OCR for business improvement.
- Developed innovative models for quick classification and text extraction using deep learning and OCR.
- Managed creating a system for automatically extracting and categorizing health claim documents, reducing manual effort.
- Designed OCR templates for bank reconciliation using OCR expertise and OpenCV.

Project Fellow [SRTM University MH, India](#) **Nanded, India** 06/2015 - 02/2017

- Funded by the Maharashtra Government (INR 108,000), this project aims to identify crime hot spots in Nanded city. Using historical Crime FIR data from Nanded Police, the project employs a Random Forest algorithm and GIS tools. Python 3, along with libraries such as Pandas, NumPy, Scikit-learn, Geopandas, and Folium, facilitates data analysis and visualization. The goal is to create visual heatmaps of high-crime areas and provide recommendations for effective police resource allocation, enhancing the safety of Nanded residents.

Online Courses & Certifications

- Applied Machine Learning in Python by University of Michigan (January. 2020) - [Coursera](#)
- Applied Text Mining in Python by University of Michigan (January. 2020) - [Coursera](#)
- How Google does Machine Learning by Google Cloud (February. 2020) - [Coursera](#)
- Convolution Neural Networks in TensorFlow by DeepLearning.AI (April. 2020) - [Coursera](#)
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning by DeepLearning.AI (April. 2020) - [Coursera](#)

- Applied Social Network Analysis in Python, by University of Michigan (March. 2020) - [Coursera](#)

Education

PhD Computer Science	SRTM University	Nanded, MH, India	2017-2020
MPhil Computer Science	SRTM University	Nanded, MH, India	2015-2017
M.Sc Computer Science	SRTM University	Nanded, MH, India	2012-2014
BCA Computer Science	SRTM University	Nanded, MH, India	2009-2011

Skills

- **Machine Learning:** Supervised and unsupervised learning, neural networks, deep learning, reinforcement learning.
- **Data Science:** Data preprocessing, exploratory data analysis, statistical analysis, feature engineering.
- **Programming Languages:** Python, R, SQL, Java.
- **Frameworks & Libraries:** TensorFlow, PyTorch, Keras, Scikit-learn, Pandas, NumPy, OpenCV.
- **Natural Language Processing (NLP):** Text mining, information extraction, sentiment analysis, NLP model development.
- **Computer Vision:** Object detection, image classification, OCR applications, image processing.
- **Tools & Platforms:** Git, Azure, Google Cloud, Jupyter Notebook, Anaconda.
- **Data Visualization:** Matplotlib, Seaborn, Plotly, Geopandas, Folium.
- **Project Management:** Agile methodologies, project coordination, collaboration with international teams.
- **Research:** Academic research, prototype development, grant writing, publication.

Publications

- **Kailash A. Hambarde** and Hugo Proença. "Image-based human re-identification: Which covariates are actually (the most) important?." *Image and Vision Computing* 143 (2024): 104917. [doi:10.1016/j.imavis.2023.104917](#)
- Lamsaf, Asmae, Pranita Samale, Hugo Proença, João C. Neves, and **Kailash A. Hambarde**. "Advancing Manufacturing Energy Efficiency: The Role of AI and Web-Based Tools." In *2024 International Conference on Emerging Smart Computing and Informatics (ESCI)*, pp. 1-6. IEEE, 2024. [doi:10.1109/ESCI59607.2024.10497194](#)
- **Kailash A. Hambarde**, Hugo Proença, "Information Retrieval: Recent Advances and Beyond", *IEEE Access*, vol. 11, pp. 76581-76604, 2023. [doi:10.1109/ACCESS.2023.3208904](#)
- **Kailash A. Hambarde**, and Hugo Proença. "WSRR: Weighted Rank-Relevance Sampling for Dense Text Retrieval." In *International Conference on Information and Communication Technology for Intelligent Systems*, pp. 239-248. Singapore: Springer Nature Singapore, 2023. [doi:10.1007/978-981-99-3758-5_22](#)
- Özge Doğuç, Gökhan Silahtaroglu, Zehra Nur Canbolat, **Kailash A. Hambarde**, Ahmet Alperen Yiğitbaşı, Hasan Gökay, Mesut Yılmaz. "Diagnosis of Covid-19 Via Patient Breath Data Using Artificial Intelligence." *Emerging Science Journal*. [DOI: 10.28991/ESJ-2023-SPER-08](#)
- **Kailash A. Hambarde**, Gökhan Silahtaroglu et al.. "Augmentation of Behavioral Analysis Framework for E-Commerce Customers Using MLP-Based ANN." In *Advances in Data Science and Management: Proceedings of ICDSM 2019*, pp. 45-50. Springer Singapore, 2020. [DOI: ~10.1007/978-981-15-0978-0_4](#)
- Shaikh Husen, Santosh Khamitkar, Parag Bhalchandra, Preetam Tamsekar, Govind Kulkarni, and **Kailash A. Hambarde**. "Prediction of artificial water recharge sites using fusion of RS, GIS, AHP and GA Technologies." In *Advances in Data Science and Management: Proceedings of ICDSM 2019*, pp. 387-394. Springer Singapore, 2020. [DOI: 10.1007/978-981-15-0978-0_38](#)
- **Kailash A. Hambarde**, Gökhan Silahtaroglu, Santosh Khamitkar, Parag Bhalchandra, Husen Shaikh, Govind Kulkarni, Pritam Tamsekar, and Pranita Samale. "Data analytics implemented over E-commerce data to evaluate performance

of supervised learning approaches in relation to customer behavior." In *Soft Computing for Problem Solving: SocProS 2018, Volume 1*, pp. 285-293. Springer Singapore, 2020. DOI: [10.1007/978-981-15-0035-0_22](https://doi.org/10.1007/978-981-15-0035-0_22)

- Preetam Tamsekar and **Kailash A. Hambarde**. "Comparative analysis of supervised machine learning algorithms for GIS-based crop selection prediction model." In *Computing and Network Sustainability: Proceedings of IRSCNS 2018*, pp. 309-314. Springer Singapore, 2019. DOI: [10.1007/978-981-13-7150-9_33](https://doi.org/10.1007/978-981-13-7150-9_33)
- Preetam Tamsekar and **Kailash A. Hambarde**, and Vijay Bahuguna. "Architectural outline of GIS-based decision support system for crop selection." In *Smart Computing and Informatics: Proceedings of the First International Conference on SCI 2016, Volume 1*, pp. 155-162. Springer Singapore, 2018. DOI: [10.1007/978-981-10-5544-7_16](https://doi.org/10.1007/978-981-10-5544-7_16)
- Preetam Tamsekar and **Kailash A. Hambarde**, Pawan Wasnik, Shaikh Husen, and Vijendra Kamble. "Architectural outline of decision support system for crop selection using GIS and DM techniques." In *Computing and Network Sustainability: Proceedings of IRSCNS 2016*, pp. 101-108. Springer Singapore, 2017. DOI: [10.1007/978-981-10-3935-5_11](https://doi.org/10.1007/978-981-10-3935-5_11)
- Govind Kulkarni and **Kailash A. Hambarde** "Effective use of GIS based spatial pattern technology for urban greenery space planning: a case study for Ganesh Nagar area of Nanded city." In *Proceedings of 2nd International Conference on Intelligent Computing and Applications: ICICA 2015*, pp. 123-132. Springer Singapore, 2017. DOI: [10.1007/978-981-10-1645-5_11](https://doi.org/10.1007/978-981-10-1645-5_11)

Languages

- **English** [Professional]
- **Portugess** [Basic] - Learning
- **Spanish** [Basic] - Learning
- **Marathi** [Native] - A1
- **Hindi** [Native] - A1

References

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2. **Prof. Gökhan Silahtaroglu**
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