

Shashwat Sarkar

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EXPERIENCE

AI & Cloud Engineer (SDE)

Jan 2024 – Present

NCompass

Full-time

- Built **WarrantyVault**, an **agentic workflow** extracting and validating invoice & warranty fields via LLM agents, stored under **multi-tenant isolation** with role-scoped retrieval.
- Established **MLOps pipelines on GCP**: training to versioned deployment on **Vertex AI** over **BigQuery** feature tables, with **Looker** dashboards for drift and model monitoring.
- Architected and implemented a **Pilot Light disaster recovery (DR)** strategy for a multi-tenant infrastructure, ensuring 99.99% data integrity and achieving high availability during unplanned outages.
- Designed and managed cross-account infrastructure for NCompass' **AWS cloud-native data platform**, streamlining **ML and analytics workloads** through automated provisioning, **IaC standardization**, and enhanced resource isolation, reducing deployment lead times by 15%.
- Led the **CI/CD modernization initiative** for NCompass' microservices ecosystem, developing **pipeline-as-code** workflows with AWS CodePipeline and Bitbucket, implementing blue-green deployment strategies, and achieving 30% faster, zero-downtime releases.
- Provisioned and managed multi-environment **AWS infrastructure** using Terraform and CloudFormation, ensuring reproducible environments and reducing configuration drift by over 50%.

Researcher

Jun 2023 – Present

Computer Vision and Pattern Recognition (CVPR) Unit, ISI, Kolkata

Part-time

- Worked on **DATR: Domain-Agnostic Text Recognizer**, yielding ~4% overall accuracy gain and enhanced domain generalization on scene, drone, and underwater datasets.
- Worked on **DITS: Domain-Independent Text Spotter** developing an end-to-end model for robust text spotting achieved ~7% higher accuracy in special domains and ~3% improvement on standard benchmarks.
- Developed a **New Multimodal Cross-Domain Network for Classification of Challenging Scene Images**, enhancing cross-domain robustness by 1-3%, enabling accurate challenge classification.
- Designed and implemented deep learning models for end-to-end text spotting, text recognition.
- Working on the topics of text spotting, text recognition & document analysis.

EDUCATION

Sikkim Manipal Institute of Technology

Oct 2020 – Aug 2024

Bachelor of Technology (B.Tech) in Computer Science and Engineering

Majitar, Sikkim

CGPA: 9.41/10

Hiranandani Foundation School

May 2018 – May 2020

Senior Secondary (Class XII)

Thane, Maharashtra

CGPA: 7.94/10

PUBLICATIONS

Multimodal Exponential Moving Average-guided Representation for Integrated Tumor-segmentation and Survival Prediction [↗](#)

2026

Accepted | Engineering Applications of Artificial Intelligence

Ashis Datta, **Shashwat Sarkar**, Aaditya Lochan Sharma, Palash Ghosal

A New Multimodal Cross-Domain Network for Classification of Challenging Scene Images [↗](#)

2025

Accepted | ICDAR WML 2025

Shashwat Sarkar, Kunal Purkayastha, Shivakumara Palaiahnakote, Muhammad Hammad Saleem, Umapada Pal, Palash Ghosal

A Template Matching Based Approach for Geolocating Cadastral Aerial Images [↗](#)

2025

Accepted | SN Computer Science

Praveen Kumar Pradhan, Aaditya Lochan Sharma, **Shashwat Sarkar**, Udayan Baruah, Biswaraj Sen, Palash Ghosal

DATR: Domain Agnostic Text Recognizer [↗](#)

2024

Accepted | ICPR 2024

Kunal Purkayastha, **Shashwat Sarkar**, Umapada Pal, Shivakumara Palaiahnakote, Palash Ghosal

TECHNICAL SKILLS

AI/ML: Image Processing, Computer Vision, Document Analysis, Large Language Models

AI/ML Infrastructure: Vertex AI (Pipelines, Model Registry, Endpoints), BigQuery, Looker

Languages: C, C++, Python, HTML, CSS, JavaScript, SQL (MySQL, PostgreSQL)

Libraries/Frameworks: Numpy, Pandas, OpenCV, Scikit-learn, TensorFlow, PyTorch, Darknet, Keras, Flask, Bootstrap

Cloud Platforms: AWS, GCP, Vultr, Hetzner, Linode

Developer Tools: Visual Studio Code, Bash, Unix/Linux, Terraform, Heroku, Render

Configuration Management: AWS Session Manager, GCP OS Config & IAP Tunneling, Ansible

Containerization: Docker, Kubernetes (AWS EKS, GCP GKE)

Version Control: Git, GitHub, Bitbucket

CI/CD: AWS CodePipeline, GCP Cloud Build, Jenkins

Monitoring & Logging: AWS CloudWatch, GCP Cloud Monitoring & Logging, Grafana

HACKATHONS

Phishing Attack Detection  | *Kavach By AICTE, MHA*

Apr 2023

- Qualified to develop a browser extension to detect phishing links in emails

Biopsy-AI  | *Google Solution Challenge by Google*

Apr 2023

- Developed a solution for early-stage cancer detection (brain tumor, breast cancer & leukemia)

Multiclass Brain Tumor Detection  | *Intel oneAPI ML Hackathon*

Mar 2023

- Built a ResNet-50 classifier for glioma, meningioma & pituitary tumors from MRI scans, achieving 98.86% test accuracy and 0.96 F1, deployed as an Angular-Flask app on Intel DevCloud using Intel-optimized TensorFlow

Log Analysis  | *Hack2Hire By Dell*

Nov 2022

- Engineered an NLP model to detect concerning Hadoop error logs

PROJECTS

Text Summarizer  | *Numpy, Pandas, Scikit-learn, Matplotlib, PyTorch, Hugging Face*

Apr 2023

- Engineered a text summarization tool using T5 transformer, retaining context and reducing length

Brain Tumor Detection  | *Numpy, Pandas, Scikit-learn, TensorFlow, Keras*

Mar 2023

- Developed a tool to classify and predict brain tumors using CNN

Book Recommender System  | *Numpy, Pandas, Scikit-learn, Flask, Bootstrap CSS*

Mar 2023

- Built REST APIs for Top 50 books and recommendations based on user input

POSITIONS OF RESPONSIBILITY

AI & ML Core Team

2022 – 2023

Google Developer Students Club (GDSC), SMIT

Team member

- Taught foundational concepts on Python and ML to **30+ students**.
- Conducted workshops on live ML/AI based projects with the team.
- Mentored student-teams on solutions and approaches to problem statements in hackathons.

Treasurer

2022 – 2023

Institute of Electrical and Electronics Engineers (IEEE), SMIT SB

Executive Role

- Conducted workshops to discuss, spread awareness and **encourage a research-friendly environment** in college.
- Managed the annual budget and financial planning for IEEE-SMIT Student Branch events and workshops.
- Handled sponsorships, memberships, and inter-departmental coordination for multiple technical fests.

CERTIFICATIONS & WORKSHOPS

International Workshop on Machine and Data Analytics

2024

ISI Kolkata

Workshop

Machine Learning A–Z: AI, Python & R in Data Science

2022

Udemy

Certification