

Research Profile

My research investigates how dynamic, self-evolving AI systems institutionalize and scale human inequality at a global level, with particular attention to caste as a form of graded algorithmic inequality. Rather than treating algorithmic bias as a static, binary classification error, I study how large language models, generative systems, and autonomous agents transform subtle, historical proxies—such as linguistic cues, naming conventions, and institutional records—into active decision rules across finance, employment, education, and welfare. Grounded in a cross-disciplinary background spanning computer science and creative writing, I leverage critical literary theory and close textual analysis to audit the latent socio-cultural narratives encoded within neural network weights.

Research Skills

Programming & Frameworks: Python, R, PyTorch, TensorFlow, OpenCV.

AI Methods: Transformer/BERT NLP pipelines, agentic AI systems, multi-modal learning, fine-tuning, evaluation & benchmarking.

AI Bias & Fairness: Bias auditing across text and image models, mitigation strategies, dataset construction, error analysis.

Research & Writing: Academic writing, literary theory, interdisciplinary analysis, mentorship.

Research Training, Certifications & Academic Distinctions

2026 **AI Transparency Conference (AITC 2026)**, COAI Research (Nuremberg, Germany).
Participant. Research training in AI transparency, trust, compliance, and governance.

2025 **Artificial Intelligence: Ethics & Societal Challenges**, Coursera (Lund University).
Analyzed ethical dimensions of AI systems, including algorithmic bias, surveillance, privacy, and democratic impact. (Verified Credential)

2013 **Feature Extraction: Road Network Identification from Satellite Imagery**, MNNIT Allahabad.
Developed an automated segmentation system for traffic region identification.

2014–2016 **GATE Scholarship (Government of India)** — Fully funded M.Tech awarded through national competitive examination.

Relevant Academic and Research Experiences

Assistant Professor | UPES | Dehradun | India

November, 2024–Present Taught courses on applied AI/ML, NLP, Python Programming, and data analytics, regularly handling two classes per semester, each with an average enrollment of approximately 60 students. Equipped students with hands-on, industry-relevant skills in data pipeline construction and predictive model deployment for cutting-edge applications in healthcare, social media, and education.

Assistant Professor | Parul University | Vadodara | India

April, 2024–October, 2024 Taught Design & Analysis of Algorithms and NLP courses, regularly handling two classes per semester, each with an average enrollment of approximately 65 students. Mentored undergraduates through the end-to-end development of functional chatbots for their final year projects, successfully translating algorithm theory into tangible AI applications.

Data Scientist | Sortit AI | London | UK

April, 2022 – October, 2022 Served as lead developer, reporting directly to the CEO and overseeing core technical decision-making for the company. Led the design and development of a comprehensive floor plan image dataset and implemented CNN-based classification models to identify architectural elements, enabling automated cost estimation from single floor plans..

Computer Researcher (Holographer) | Basingstoke | UK

February,2021 – December,2021 Core member of a four-person holography research team, reporting directly to the Chief Scientist. Contributed to the development of secure holographic master plates for international clients, including Microsoft and national currencies. Engineered novel image processing techniques to improve production quality and anti-counterfeiting measures.

Software Engineer/Chief Developer | Sketchbytes Research Labs | India

June,2016 – August,2019 Reporting directly to the CEO, led the face detection and biometric authentication division. Implemented CNN models for medical image analysis, optimizing architectures for disease detection, bone fracture detection, and body region segmentation. Led the face detection and biometric authentication division of the company.

Teaching Assistantship | NIT Durgapur | India

August,2015 – May,2016 **Digital Image Processing Lab & C Programming Lab:** Assisted faculty in conducting laboratory sessions, guiding undergraduate students through complex concepts and practical implementations.

Education

2019–2021 **Master of Arts, Creative Writing**, *University of Portsmouth*, Portsmouth, UK.

Dissertation | Defiance of Lotus

Composed original free-form poetry and critical studies of exploring themes of nature, the pastoral, identity, hardships, and resistance.

2014–2016 **MTech, Computer Science & Engineering**, *National Institute of Technology*, Durgapur.

Dissertation | Heterogeneous Face Identification by Fusion of Local Descriptors

Developed a computer vision model that integrates MB-LBP and MLBP feature descriptors to enhance cross-modal face recognition performance. This work included problem definition, dataset preparation, model design, and systematic evaluation through benchmarking.

2010–2014 **BTech, Computer Science & Technology**, *UIET, CSJM University*, Kanpur.

Dissertation | Automatic Detection of Ribs, Blood Vessels, and Cancerous Nodules from an Anterior-posterior X-ray Radiograph

Developed a diagnostic image processing pipeline that began with data cleaning and enhancement. Subsequent stages used Canny edge detection and adaptive thresholding to segment ribs and vascular structures, which facilitated the targeted identification of cancerous nodules.

Publications

Book Publication

2020 **Kunwar Pankaj Siddharth**, *The Birds of Passage: Collection of Poems*, Notion Press.

Book Chapters (Forthcoming)

2026 (forthcoming) **Kunwar Pankaj Siddharth**, *Graded Algorithmic Inequality: Caste Bias and Discriminatory Agent Behaviour in AI Decision Systems* (abstract accepted), *Digital Media and Caste* (edited volume; full chapter due 1 September 2026; double-blind peer review).

In Conference Proceedings

2017 **Kunwar Pankaj Siddharth, and Dakshina Ranjan Kisku**, Heterogeneous Face Identification by Fusion of Local Descriptors, *IEEE 7th International Computing Conference, IACC 2017*.

Awards

2012 **1st Position**, C Quiz (Programming), Ignitia — Pranveer Institute of Technology, Kanpur.

2011 **3rd Position**, Pikkon (Photography), Techmart — UIET Kanpur.