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FACULTY CONNECT

Crafting Connections Between Design, Data, and People

PROF. AMIT JENA Assistant Professor - Design

I've recently joined FLAME University as an Assistant Professor of Design in the Department of Design, Art & Performance. My main focus areas are Data Visualization and Human-Computer Interaction (HCI). Over the years, I've had the chance to wear many hats-teaching at universities, working in the industry, and delving into cross-disciplinary research. A big part of my work has been about discovering ways to make learning more accessible, especially at the grassroots level. My academic journey started with an integrated M.Sc. in Applied Mathematics from Central University of Jharkhand, followed by an M.Tech. in Computer Science and Engineering from IIIT-Bhubaneswar. In my doctoral research at the IIT Bombay-Monash Research Academy, I'm exploring how to make data visualization more user-friendly for people from all walks of life.



Before joining FLAME, I taught as a guest faculty member at the National Institute of Design (NID) Haryana and the MIT Institute of Design in Pune, teaching Data Visualization and User Experience Design. My teaching

style is hands-on—I believe the best way to learn is by doing. I focus less on the specific tools and more on how to communicate ideas effectively, no matter what software you're using. Real-life projects and problem-solving are key in my classes because I think that's where students really start to understand the theory and pick up the practical skills they need. Outside academia, I've worked as a data visualization consultant for the International Food Policy Research Institute (IFPRI). One of my big projects there was designing district nutrition profiles for over 700 districts in India, which required a deep understanding of both technical visualization techniques and the local contexts of the data. I've also taken on various freelance projects where I've tried to bring storytelling into the mix, making data visualization more engaging and informative.

My research is all about making data visualization something that everyone can use, not just the experts.

I believe that data visualization should be a tool that helps all kinds of people, especially those who are often left out of the design process (the "next billion users").

My PhD work focuses on understanding the challenges these users face and figuring out how to make visualizations that work for them. I want to ensure that interactive tools make complex data easier to understand, blending aspects of HCI and visual analytics.

For me, design needs to be in sync with technological advancements to stay relevant. It's not just about how things look or function, but about using technology to improve people's lives. As technology evolves, designers should be leading the way, figuring out how to use new tools to create solutions that are intuitive and user-centered. I believe in bringing emerging technologies like AI into the design process, seeing them as partners in creativity. By working with these advancements, we can tackle tough problems, create personalized experiences, and make technology accessible to more people.

THEMED ARTICLES







Design Lab: Cultivating a Culture of Making and Innovation

PROF. SHAMIT SHRIVASTAV Associate Professor of Practice - Design

In today's rapidly evolving technological landscape, the role of a makerspace or a design lab in a university setting goes beyond simply providing tools and space. It is about fostering a culture of creating, prototyping, and innovation. The Design Lab at FLAME University embodies this ethos, empowering students to turn their ideas into reality while cultivating an environment that thrives on experimentation and collaborative learning.

Encouraging Interdisciplinary Learning and an Experimental Mindset

The lab is an incubator for innovation, where students are encouraged to explore ideas with an experimental approach. Unlike traditional academic settings that often focus on predictable outcomes, the Design Lab emphasizes learning through iterations. This process encourages



students to take risks and embrace failure—and learn from it. In doing so, they gain an applied understanding of creativity and resilience—skills that prove invaluable in any field of study or work. Here, failure is not seen as

a setback but as a crucial step in the design process, fostering a mindset that encourages perseverance and adaptability. By promoting a "learning by doing" approach, the Design Lab enables students to break out of conventional thinking patterns, empowering them to pursue solutions to realworld problems. The lab's approach to prototyping progresses from low-fidelity mock-ups to refined prototypes, allowing students to iterate their ideas through feedback and refinement. At the heart of the Design Lab's success is its vibrant community. Students from various disciplines come together to share insights, ideas, and encouragement, creating a dynamic space that is as much about collaboration as it is about innovation. The lab fosters an inclusive atmosphere where students can feel comfortable exploring new ideas, helping each other, and growing together. This environment of fun and learning instills a sense of belonging and mutual support, making the Design Lab a cornerstone of the university's creative community.

Designing Innovative Solutions to Transform Realities

According to Herbert Simon, an American economist and political scientist, design is about transforming current conditions into preferable ones. Designers are inherently generalists, capable of integrating multiple perspectives and disciplines to arrive at innovative solutions. Students in the Design Lab learn that good design involves tackling "wicked" problems-complex issues with no easy answers, requiring an understanding of interconnected social, environmental, and economic factors. Beyond serving as a space for personal projects, the lab is a home for innovative solutions that often lead to intellectual property generation. Student projects, faculty-led research, and collaborative design events such as hackathons often produce ideas and prototypes with real-world applications. The lab provides the infrastructure and support for students to explore patentable ideas, ultimately fostering a culture where innovation has tangible value and impact. Equipped with tools and machinery, the lab gives students the resources to bring their ideas to life, teaching them effective material usage, time management, and cost optimization along the way.

Platform for Industry-Academic Collaboration

The Design Lab is also a dynamic platform for industry and academic collaboration. By encouraging students to work on live projects from industry partners, the space connects the academic world with real-world challenges. These collaborations provide students with invaluable hands-on experience, exposing them to current industry practices and expectations. Partnering with industry experts also brings fresh insights, as professionals from different fields share their expertise, enriching the learning experience for students and faculty alike.

The reach of the Design Lab extends beyond the university walls through partnerships with external ecosystem players, including vendors, other maker spaces, and technology partners. These connections enrich the lab's offerings and ensure that students have access to the latest technologies and materials. Collaborating with these external partners enhances the learning experience by providing exposure to diverse perspectives and resources, bridging the gap between academia and industry, and strengthening the lab's role as a versatile, real-world learning environment.

Design Lab at FLAME

The Design Lab at FLAME is built with a vision of holistic, experiential learning that goes beyond the classroom. By promoting a hands-on approach to problem-solving, fostering collaboration with industry and ecosystem partners, and supporting entrepreneurial ambition, the lab is shaping students into innovative thinkers, skilled makers, and potential leaders. It is a space that brings ideas to life, empowers students to explore their creative potential, and prepares them to make a positive impact in the world. Students with ambitions to start their own companies find the lab to be an ideal space to incubate their ideas. By offering resources, mentorship, and a supportive environment, the space empowers aspiring founders to prototype their ideas and explore their viability. From refining product designs to building a proof of concept, the Design Lab enables students to take their first steps toward turning their entrepreneurial dreams into reality.



RESEARCH FOCUS





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RESEARCH FOCUS

Decoding Protein Language: Machine Learning Predicts Sites of AMPylation

PROF. RENU DHADWAL Associate Professor - Applied Mathematics

To describe AMPylation in simple language, we can imagine a protein as a complex machine with lots of moving parts. Sometimes, tiny switches need to be attached to these parts to change how the machine works. These switches can turn parts on or off, speed them up, or slow them down.

AMPylation sites are like specific attachment points on the protein machine where one of these tiny switches, called an AMP group, can be added. This AMP group acts like a little tag that can change the protein's behavior. The alterations that occur are also called "posttranslational modification" (PTM) of the protein.

This tagging process is important because it affects many biological processes, like how cells communicate with each other and how they deal with stress. AMPylation is even linked to diseases like Alzheimer's Disease and cancer.



Scientists are interested in finding these AMPylation sites because they can help us understand how proteins work and how they might be involved in disease. However, finding them in a lab can be tricky and time-consuming. Therefore,

there is a need for developing algorithms that can predict where these AMPylation sites are located on a protein. By understanding AMPylation sites, scientists can gain insight into how proteins function and potentially develop new drugs or therapies that target these sites to treat disease.

In this article, we discuss a new method for predicting AMPylation sites in proteins using machine learning. The performance of a machine

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learning model hinges on the features used to represent the data. The feature engineering framework is the heart of this research. The goal was to transform the raw protein sequence data into a format that machine learning models can effectively use to predict AMPylation sites. Feature Engineering framework starts by considering different ways to represent the protein sequence. We can use all 20 amino acids or group them based on properties like hydrophobicity or structural similarity. Next, it extracts various features from these representations. We can think of features as numerical descriptions of the sequences. Some examples include the following:

Monogram Counts: How often each amino acid or group appears

Bigram Counts: How often pairs of amino acids or groups occur together. We can even look at pairs separated by a certain distance, which we call offsets.

Texture Features: These capture the spatial relationships between amino acids based on the bigram counts.

Pro2vec Embeddings: These are like creating a numerical fingerprint of the sequence using a technique borrowed from natural language processing called Word2Vec.

Finally, all these features are combined into a single feature vector that the machine learning model can use. By combining different representations, feature types, and offsets, the framework can generate a variety of feature sets. We tested our framework on a dataset of 378 protein sequences with 153 AMPylation sites. We used a range of machine learning models, including logistic regression, support vector machines, artificial neural networks, and ensemble tree methods like random forest, XGBoost, and LightGBM. The results showed that certain feature combinations were more effective than others, depending on the machine learning model used. For example, the artificial neural network performed best using bigram counts with offsets of 1 and 3. This suggests that capturing the local relationships between amino acids is important for this model.

On the other hand, the random forest model achieved the highest AUC-ROC score using a combination of monogram and bigram counts with offsets of 1 and 3. This indicates that both the frequency of individual amino acids and their pairwise relationships contribute to its predictive power. Since different models seemed to favor different features, and often some of these models are considered "black boxes", the idea of "explainability" becomes crucial in machine learning, especially when using complex models like random forests. This is why we used SHAP (SHapley Additive exPlanations) to understand how the random forest model was making its predictions. SHAP is a method for explaining the output of any machine learning model by assigning an importance value to each feature.

In our case, SHAP allowed us to obtain both local and global explanations for the model's predictions

Local explanations focus on individual predictions. We used waterfall plots to visualize how each feature contributed to a specific prediction. This helped us understand why the model classified a particular protein sequence as AMPylated or not.

Global explanations give us a broader view of the model's behavior. We used bar plots to show the average importance of each feature across all predictions. This highlighted the features that were most influential in the model's overall decisionmaking.

Our feature engineering framework is designed to be flexible and can be adapted for other posttranslational modification prediction tasks. In fact, any problem where we are trying to predict something about a protein sequence could potentially benefit from this approach. The key is to carefully consider the specific properties and relationships between amino acids that are relevant to the task at hand. In summary, the study demonstrates that a carefully designed feature engineering framework is essential for effective AMPylation site prediction. By transforming raw protein sequences into a rich and informative set of features, the framework empowers machine learning models to accurately identify AMPylation sites, contributing to a deeper understanding of this crucial PTM and its biological implications.

DISCOVER INDIA PROGRAM



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Ab Hamara Daur Hai, Yeh Naya Indore Hai: Exploring the tech-enabled transformation of waste management in Indore

Group Representative: Vrinda Mandovra

Group Members: Abhipsha Luitel, Akshata Nair, Asmita Ramdhave, Ishaanvi Shah, Medhavi Regmi, Mehar Chaudhry, Piya Shah, Rashi Jain, Riya Chaurasia, Shreenidhi Manigandann, Sruthi Kartha

Research and Field Mentor PROF. ABHINEETY GOEL Associate Professor - Environmental Studies

Background

Indore, the business capital of Madhya Pradesh, a Tier 1 smart city, and India's cleanest city for seven consecutive years, is a representation of growth, rich culture, history, and grandeur that reflects in its architectural marvels. The city has, over the years, successfully achieved immense industrial growth. Many international companies like Wipro, Google, and Amazon have chosen to set up their industries in the city. Owing to this, Indore has also developed great infrastructure and transportation connectivity. The whole city is connected through air, rail, and road, making urban mobility very efficient (Madhya Pradesh Industrial Development Corporation,



2022). Home to prestigious educational institutions like the Indian Institute of Management, Indian Institute of Technology, and Shri Govindram Seksaria Institute of Technology and Science, Indore is also renowned for its status as an

educational hub within the central Indian region.

Indore, India's cleanest city for seven years since 2017 under the Swachh Survekshan Awards, exemplifies effective waste management. Its success stems from specialized infrastructure, a disciplined workforce, community involvement, and innovative policies. Since 2014, the Indore Municipal Corporation (IMC) has aggressively addressed cleanliness issues. Indore has reduced pollution and minimized landfill reliance by drastically reducing open defecation, implementing waste segregation, and developing sustainable processing systems. Having played an instrumental role in this success, the Indore Municipal Corporation (IMC) gained first place for sanitation and waste management in April 2022. Considering the total population of the city (26,72,187 people in 2021), this is no small feat (Smart City Indore, 2022).

Key factors contributing to Indore's success include the IMC's strategic approach, technological advancements like geospatial positioning and RFID tracking, and community engagement. The IMC's unique methods to gain citizen cooperation and enthusiasm have been instrumental in fostering a culture of cleanliness. This study analyzes Indore's multifaceted approach to provide insights for replicating its success in other Indian cities, ultimately achieving the vision of a Swachh Bharat.

Research Questions

The following research questions were formulated:

 Tracing the history of waste management in Indore to study the evolution of Indore's cleanliness
 Understanding governmental strategies for technology implementation

3) Assessing behavioral change and community response through the government's PR exercises

The first question explores Indore's historical journey, focusing on its socio-economic and cultural evolution and waste management systems from preindependence to the Swachh Bharat campaign.

The second question analyzes the types of technology used in Indore, including waste collection vehicle tracking, the 311 Municipal App, geofencing, GIS mapping, and others, along with their implementation strategies and government policies.

The third question evaluates community behavior and response to Indore's cleanliness initiatives, including PR campaigns, outreach programs, and public engagement activities that fostered a positive attitude towards cleaner surroundings.

Research Design

This study used a descriptive and evaluative research design to understand Indore's waste management transformation. Data was collected using primary and secondary methods from various stakeholders, including shopkeepers, households, government officials, Safai Mitras, and NGOs.

Data Collection

Secondary Data: The literature review included academic papers, government documents, and news articles on Indore's technology, waste management, and government campaigns.

Primary Data: Mixed methods were used, including 104 surveys and 55 interviews/focus groups.

Locations

Data collection occurred in Indore Municipal Corporation, Garbage Transfer Station, Sewage Treatment Plant, Devguradia Biomethanation Plant, NEPRA branch, Khajrana Temple, Rajwada Palace, Chappan Dukan, Vijaynagar, Old Indore, Devi Ahilyabai Vishwa Vidyalaya University, and certain slums.

Ethical Considerations

The Institutional Review Board approved this research. Ethical practices were followed, including informed consent, confidentiality, and anonymity.

Findings

Indore's journey to cleanliness began centuries ago, marked by challenges like plagues and efforts to improve sanitation. British rule saw contributions from renowned town planner Patrick Geddes, who developed a city development plan. Postindependence, innovative composting techniques and Acharya Vinobha Bhave's influence encouraged citizen participation (Fig. 1). Government pilot projects for door-to-door waste collection faced initial difficulties but paved the way for future improvements. The Swachh Bharat Abhiyan, launched in 2014, played a pivotal role in Indore's transformation into India's cleanest city.



Fig.1. Timeline of the evolution of cleanliness in Indore

After being named the cleanest city in India in 2017, Indore's government has implemented various technologies to improve waste management. From 2015 to 2023, these efforts included upgrading public toilets, using cycle rickshaws for door-todoor collection, implementing GPS tracking for garbage collection vehicles (Fig. 2), establishing



Fig. 2. GPS tracking of garbage vehicles

a biomethanation plant, launching a citizen app, deploying IoT-enabled trash bins, using data analytics for route optimization, and promoting public awareness during COVID-19. Indore's future goals include becoming a zero-landfill city and improving air quality. In the near future, Indore aims to bring its Air Quality Index down to "Good Condition", or below 50, as per National Standards. To reduce dust particle matter in the air, the IMC will ensure regular mechanical sweeping, green buffers along traffic corridors, maintenance of smooth roads, prohibition of burning solid waste, etc. These are among the many measures to ensure the cleanliness of the air. An integral contribution to the success of the waste management system of



Fig. 3. A plastic "heist" conducted by the NGO

Indore is the government-initiated campaigns that are aimed at behavioral change and awareness. Large-scale change in behavior in the community has been brought forward through different policies and schemes such as the incorporation of the 311 app, individual segregation, maintenance of public spaces, major complaints of the people, initiatives conducted by NGOs and the government, and the use of soft influence such as songs and games such as plastic heist (Fig. 3).

In line with what was told by the interviewees, during the field trip, a "Plastic Heist" was observed, which was conducted as an initiative by the NGO working with the government to get rid of singleuse plastic. It was an awareness drive that was conducted to engage community participation in the reduction of the use of single-use plastic. The process starts with monitoring, and then goes on to inform the citizens of the dangers of the material, and ends with the necessary behavioural change. The efforts of the municipal body were greatly appreciated and complemented by the public. They embraced the waste management system and took an active part in it, ensuring its success. The government raised awareness amongst people of all economic backgrounds. By organising annual competitions for slogans, songs and photography, they engaged the community and encouraged them to take the cleanliness of their surroundings seriously. They targeted female breadwinners and housewives, encouraged them to become safai mitras and promoted a gender-neutral cleaning initiative in common houses. All these initiatives resulted in a collaborative effort from the community.

Lessons for Future

Indore's successful waste management system is a result of collaborative efforts, government-led campaigns, and community engagement. To sustain this success, institutionalizing waste management practices is crucial. Indore's history of progress and setbacks highlights the importance of consistent efforts and adaptability.

The city's journey began with the Swachh Bharat Abhiyan in 2014, leading to significant improvements. The government implemented various strategies, including technology integration, legacy waste removal, door-to-door collection, and citizen engagement initiatives. These efforts resulted in a cleaner city, improved infrastructure, and increased community participation.

Indore's success teaches us valuable lessons about the power of collective action. By prioritizing waste management and fostering a shared sense of responsibility, we can create a cleaner and healthier future for ourselves and future generations.

Personal Experience

Participating in this research was a transformative experience, both professionally and personally. The field visits to various waste management facilities in Indore, including the Garbage Transfer Station and the Devguradia Biomethanation Plant, provided first-hand insight into the complexity and scale of the city's waste management efforts. Engaging with Safai Mitras and government officials deepened our understanding of how technology, community cooperation, and governmental strategies can drive impactful change. This study reinforced our belief in the importance of sustainable practices and inspired us to advocate for similar systems in other cities, contributing to a cleaner, greener future (Fig. 4).



Fig. 4. The group



Breaking Barriers: The Transformative Journey of Women's Football in Rural Ajmer

Group Members: Aanvi Kapoor, Ananya Berani, Anusha Jhajharia, Ishita Sharaf, Khushi Jain, Lakshita Sharma, Mahima Chennadi, Nandika Chokhany, Raghav Kajaria, Sanya Kshatriya, Veda Vudoagiri, Vedika Agarwal, Yutii Agarwal

Every evening at 5 p.m., after a long day of school and household chores, a group of girls from the rural villages of Ajmer lace up their shoes and step onto the makeshift field, ready for football. Their energy is electric, their dedication unwavering, and the passion in their eyes is fierce and unyielding. Watching them play against the odds, against tradition—compels you to cheer them on, as their resilience lights up the dusty field and redefines what is possible for young women in these communities.

Our research project titled "Chupke Se Goal: Women in Ajmer Taking the Last Free Kick" was a study of a grassroots-level initiative of women's football in Ajmer, led by a predominantly women-run organization called the Mahila Jan Adhikar Samiti, which is dedicated to championing the constitutional and human Research and Field Mentor PROF. AVANI SABADE Academic Specialist - Literary & Cultural Studies



rights of women in the district of Ajmer. Through this research, we aimed to explore the journey of introducing a sport like football to the young women of rural villages, where traditional gender roles still largely define a

woman's life path, and how it was accepted not only by the prospective players but also by the villagers and how this introduction has impacted the lives of the women in these villages.

In the modest office of Mahila Jan Adhikar Samiti (MJAS), we met with Ms. Indira Pancholi, the President of the organization, to understand the purpose behind starting the NGO. From our long conversation, it became clear that MJAS is dedicated





to fighting for the rights of women in Ajmer: not only for those facing challenges today but also for future generations. Their goal is to secure not just the freedom for women to dream but the right to turn those dreams into reality.

When we began our primary research, we went from house to house, speaking not only to the female athletes but also to their families, relatives, and sometimes fellow villagers. We found a shared story across the board. Initially, the community was strongly opposed to introducing football to the girls. In these villages, young girls were traditionally allowed to study only up to a certain point, after which they were expected to either marry or focus solely on household duties. So the idea of girls playing a sport, especially one requiring regular practice and non-traditional attire, was met with resistance.

Despite these barriers, the girls chose to move forward, even when forced to play in salwar kameez or other traditional attire instead of sportswear. Over time, with persistent efforts by MJAS and the athletes' own determination, most families came to accept the sports attire. For the athletes, football offered more than just an activity; it became a symbol of hope, an opportunity to pursue something they loved. Many girls shared that balancing traditional



responsibilities with their desire to play wasn't easy, but the sport gave them a renewed sense of purpose.

Beyond the field, football has also had a tangible impact on their futures. For some, the chance to play has delayed early marriage plans, as their growing achievements in tournaments and matches across different cities convinced their parents to support their continued education. The transformation over nearly a decade has been remarkable, not only for the athletes but for the entire community. Villagers who once disapproved of the sport now show up at the train station to welcome the girls back from tournaments, greeting them with garlands and pride.

In communities where young women are still often expected to remain within traditional confines, the game has offered a new perspective, and in some cases, a new sense of identity. For many of these young athletes, stepping onto the field is not just about playing a game; it is a statement of possibility, an act of courage, and a reminder that their futures hold potential beyond the roles they were born into. This study offers a look not just at a sport, but at a movement—one that starts with a single goal but has the potential to change the lives of countless young women in Ajmer.



CENTRES AT FLAME UNIVERSITY





CENTRES AT FLAME UNIVERSITY

Unveiling the Future with the Centre for Digital Advancement

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PROF. SAJITH NARAYANAN

Assistant Professor - Digital Marketing & Communications Director, FLAME Centre for Digital Advancement

In March 2024, FLAME University proudly announced the establishment of a new beacon of research and innovation: the Centre for Digital Advancement (CDA). This pioneering initiative stands at the forefront of exploring how digital technologies can catalyze growth for all.

The Centre for Digital Advancement will be a research and innovation hub, dedicated to unlocking the power of digital technologies to foster societal and economic progress. Its mission is to study and leverage digital technology for the benefit of all. The Centre will delve into how various societal strata use or neglect digital technologies, laying the groundwork for future digital solutions. Recognizing the critical role of collaboration in sparking innovation, CDA will forge partnerships with companies, government agencies, non-profit organizations, and academic institutions to drive transformative change. CDA is dedicated to creating a dynamic community that brings together researchers, practitioners, academicians, and policymakers from diverse disciplines. This collaboration is aimed at developing solutions that broaden digital access and provide diverse opportunities. To facilitate this, the Centre will host a range of events, including conferences, workshops, and seminars designed to spark dialogue and foster collaborations. Additionally, through its various competitions, events, and programs, CDA seeks to empower students to drive technological innovations for social good.

Flagship Project: India Digital Literacy Index

One of CDA's inaugural projects is the ambitious India Digital Literacy Index. This project seeks to measure and analyze the digital capabilities of the Indian population, supporting the Government of India's vision to transform India into a digitally empowered society. The project will develop a customized scale to assess digital literacy, conduct pilot studies, and eventually roll out a national survey. The longitudinal data collected will help in tracking progress and shaping future digital education and empowerment initiatives.

Future Directions

In addition to the Digital Literacy Index, the Centre will identify and pilot a few solutions using digital media technologies to address specific societal problems. These solutions will be shared in open access formats to ensure they can be adapted and scaled by any interested party, making a tangible impact worldwide.

How to Get Involved

If you have ideas, proposals, or insights that could help the Centre for Digital Advancement, please reach out to us via email at cda@flame.edu.in. Your input will be invaluable in building a Centre that makes a real difference in the world. Let's join hands in shaping a future that we can all be proud of.



Centre for Knowledge Alternatives

Hasita Pattipaty, Jahnavi Sant, Karishma Shah, Amit Jena, Yugank Goyal

The Centre for Knowledge Alternatives works in two broad domains: public policy and cultural documentation. The Chronicle Project, where we capture district-level data across the country, is the flagship project of the Centre. In addition to this, we work closely with various governments on a range of public policy issues. A few of our projects include the following:

Documenting the history of Indian public administration (Capacity Building Commission, Govt. of India)

Research on gazetteer-making (Gazetteer Department, Govt. of Maharashtra)

NEP Implementation (Ministry of Higher & Technical Education, Govt. of Maharashtra)

Public procurement research (Procurement Research Cell, AJNIFM)

District-data mapping (Dept. of Economics and Statistics, Govt. of Maharashtra and Census Commissionerate, Govt. of Uttar Pradesh)

Indian Knowledge System (Ministry of Education, Govt. of India),

Developing a Global Sustainability Index (with faculty from IIM Kozhikode).

Below we offer a brief overview of some of our projects.

The Chronicle Project

This is our flagship project, an ambitious initiative to document district-level cultures and statistics across India. This project seeks to gather and synthesize both qualitative (local histories, handicrafts, folktales, cultural sites, etc.) and quantitative (agriculture, health, education, etc.) information at the district level. We began with Maharashtra and are now expanding to document the states of Uttar Pradesh, Himachal Pradesh, and Haryana. We aim to develop an open-source, interactive database that is accessible to everyone free of cost, allowing for continuous updates and community involvement in knowledge curation.

This requires an extensive apparatus of data collection, cleaning, digitizing, and curating the information that is both accurate and true to native sensibilities. While we collect statistical information from (local and national) government sources, the cultural aspects come to us through our 'District Fellows': school/college students who document their own regions or villages as part of an internship with us. The District Fellowship is indeed a unique initiative that not only allows preserving knowledge about local histories and heritage but also cultivates young 'cultural guardians' for the future who take pride in their own cultures.

The district encyclopedia we are building, we hope, will aid in local policymaking, assist local entrepreneurs in market studies, and be a wonderful source of scholarly pursuits to get a decentralized view of India.

The World Sustainable Development Index (WSDI)

Despite the growing importance of sustainability, there remains a lack of comprehensive methods to measure it. To address this, we are building an index to measure the crucial parameters. Existing indices reduce sustainability to merely environmental aspects, ignore important variables like consumption, fail to account for population sizes, and often use projected data in their calculations, leading to a skewed estimation of sustainability, which systematically favors the Global North.

Through a philosophical framework to define sustainability, we have developed four drivers of sustainability, under which there are 16 domains of influence and a total of 56 indicators. We use a rigorous methodology, benchmarked against most global indices, and collect the data from globally reputed sources.

We are running the numbers (and various tests for robustness), and the results so far are quite instructive, with many countries from the Global South making it into the top ranks while many rich countries with unsustainable ways of living are falling far behind. With such a diverse distribution of countries among the ranks, we are still looking forward to what narratives come out of the WSDI. **Indian Knowledge Systems (IKS) Project**

When we talk about unity in diversity in India, what do we really mean by unity? That is the research question that drives this project. Put differently, while cultural diversity is visible in everyday practices, where can we find that unity that binds us together?

Our hypothesis is that the common binding glue is the common life philosophy of Indians, or our jeevan darshanas. For example, the festivals Makar Sankranti, Lohri, and Pongal may seem different, but they all have the same underlying philosophy: to celebrate nature, specifically the arrival of the harvest season.

We attempt to understand five Jeevan Darshanas by looking at the gyan parampara (knowledge transfer) and laukik prayojana (practical utility) that it manifests in:

Our relationship with nature and agriculture Centrality of family Sources and methods of learning Tradition of arts and crafts Unique self-governance of villages

How do we do this? By working with various fellows who travel across different parts of India, gathering stories, documenting festivals, rituals, and everyday practices from diverse regions. Through this, we uncover cultural expressions and trace the philosophies underlying them.

The output will include essays on each of these five jeevan darshanas, and to ensure increased access, we will also produce coffee-table books, regional flipbooks/compendiums, as well as short videos. We hope these products will help build new IKS courses in colleges and also build a framework for largescale internships in cultural documentation.

The project is made possible through a grant from and a partnership with the IKS Division, Ministry of Education, Government of India.

NEW FACULTY AT FLAME

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Vinod Kumar

PhD in Marketing from Indian Institute of Technology (IIT), Roorkee

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