

Open House on Building Foundational AI Models in India

AI4India.org
January, 2025



Quick recap

The team discussed the importance of building foundational models in India, emphasizing the need for collective action, collaboration with policymakers and industry, and strategic autonomy for AI technologies. They also addressed challenges such as data and infrastructure availability, the need for a framework to evaluate AI models on Indian values, and the potential for cost reduction in AI development. The conversation ended with a call for action, volunteers to contribute to the development of foundational models, and the need for a cohesive effort from various stakeholders.

Next steps

- A team to study and document engineering techniques used by organizations like Deep Seek and 01 for lower-cost training and inferencing of AI models.
- Select members to collaborate on creating a page or list that compiles up-to-date events and developments in AI model training and optimization.
- AI for India team to launch the DataDaan portal for organizations and individuals to pledge and donate data sets for AI development.
- AI for India team to work on creating a benchmark to evaluate language models for Indian context and cultural relevance.
- The group to further discuss and debate the role of private vs government capital in funding AI development efforts in India.

Discussions in brief

AI4India Forum and DataDaan

Alok informed that the forum was for India, a non-profit set up by volunteers to promote AI development and solutions. Krishnan joined the meeting and expressed his willingness to connect the team with Professor Ravindran. Alok shared that their initiative, DataDaan, aims to encourage data owners to donate their data for research and development. The team agreed to give everyone a couple of minutes before starting the meeting.

Building Foundational Models in India

Alok initiated a discussion on the importance of building foundational models in India, emphasizing the need for collective action and collaboration with policymakers and industry. Shashi highlighted the challenges of investment, data, and infrastructure, and the need for coordinated efforts to achieve scale and impact. Krishnan discussed the strategic autonomy needed for AI technologies, the importance of cultural understanding in AI models, and the cost-effectiveness of building models in India. He also mentioned the need for a framework to evaluate AI models on Indian values and the potential for cost reduction in AI development. The conversation ended with a call for action and volunteers to contribute to the development of foundational models in India.

Addressing Madras Team Challenges

Krishnan discussed the challenges faced by the Madras team, highlighting the need for data and infrastructure. He suggested a collaborative effort between academia and industry to overcome these challenges. Alok agreed with Krishnan's points, emphasizing the importance of smart development rather than just money. Shashi asked Krishnan to introduce the team to Professor Ravindra for further discussions. Jai was expected to join the meeting but was delayed. Omkar suggested focusing on building foundation models, in addition to addressing the challenges faced by the Madras team.

Building Foundation Models for Strategic Benefits

Omkar expressed concerns about the need to build a foundation model, suggesting that it should be driven by a specific business case rather than a general desire to compete. He argued that the scale and infrastructure required to build a successful model would be difficult to match, and that smaller models would lack the necessary world knowledge. Omkar also pointed out that state propaganda models, like those used by China, could be problematic. He suggested that India should focus on specific strategic benefits and not engage in a race to build the most accurate model. Alok agreed with Omkar's perspective, emphasizing the importance of building a model with predefined purposes.

Efficient Models for India's Pharmaceutical

Alok discussed the need for more efficient and cost-effective models in India, suggesting that specific objectives should be set for each group rather than a single goal. Omkar shared his team's work on building intelligence models for specialized pharmaceutical industries, highlighting the challenges of large language models failing with complex data. He emphasized the need for models that can handle sensitive data and solve specific problems in the market. Omkar also suggested focusing on problems that free models cannot solve. Gopal was about to share his views when Jai joined the meeting.

Investing in India's Fundamental Research

Jai discussed the need for India to invest in fundamental research and technology development, particularly in areas like solar cell manufacturing. He suggested a national mission mode approach, involving professionals and institutions like IITs, to drive this research. Gopal added that India could potentially reduce the cost of building foundational models by leading an architecture change, as suggested by Satya Nadela. Krishnan agreed, emphasizing the importance of lowering inference costs to enable startups to use these models.

Building Foundational Models in India

The discussion revolved around the importance of building foundational models in India and the need for a cohesive effort from various stakeholders. Pranav emphasized the significance of linking foundational models to the larger objective of sovereign AI and highlighted the need to focus on data availability alongside infrastructure. Ramanand stressed the need for government support and investment to create the necessary infrastructure and data. Alok agreed on the collective responsibility and the need for a mission mode approach. Pranav also suggested the need for a convincing argument on why foundational models are not a luxury but a necessity for the country. The conversation ended with a consensus on the importance of a cohesive effort and the need for government support.

Developing AI Capabilities in India

Alok initiated a discussion on developing AI capabilities in India, with Rajesh suggesting the need to learn from previous efforts and improve foundational models for better application development. Rajesh also emphasized the importance of keeping inference costs low and considering the development of a large foundational model or smaller, domain-specific models. Santosh highlighted the issue of data bias and proposed creating a benchmark for models to ensure they are not biased. Mani emphasized the importance of context and specificity to India when developing foundational models, and the need to manage contracts with hyper-scalers to protect the nation's AI capabilities.

Foundational Models, Data Privacy, and Leadership

Mani emphasized the importance of creating foundational models within India, securing data, and understanding policies related to data privacy. He suggested that infrastructure growth should be accompanied by a significant effort in leadership literacy to effectively use AI. Adarsh agreed with Mani's points, adding that considering the potential opportunity cost of not having sovereign foundational models is crucial. He also suggested that while having such models is important, it's equally important to limit data transfer.

Balancing AI and Productivity Concerns

Adarsh expressed concerns about the negative influence of AI on productivity and suggested limiting its applications. Saksham, who has experience working on foundational models in the US, discussed the need for collaboration and the availability of open-source models. He also asked about open-source projects in India for building foundational models for Bharat. Nivedan, a newcomer to the group, emphasized the importance of simplifying AI concepts for non-technical leaders to make them actionable and compelling. Alok agreed with Nivedan's perspective and suggested that the group should focus on clear, straightforward communication for all stakeholders.

Efficient Training Techniques for LLMs

Omkar and Krishnan suggest documenting techniques for efficient training and inference of large language models at lower computational costs, based on recent advancements from organizations like DeepSeek and Anthropic. Omkar volunteers to maintain an up-to-date list of relevant literature and events, which could be a helpful resource for enthusiasts interested in this area. The group discusses having a team dedicated to this effort, potentially involving professors from IITs.

Indian Data Sets and Cultural Contexts

The team discussed the challenges of creating Indian data sets that accurately capture local cultural contexts. Shashi proposed a national movement to motivate Indian organizations and individuals to make anonymized data sets publicly available. A portal is under development to facilitate this. Mani suggested exploring the Indian government's data portal, data.gov.in, for potential improvements. Pranav highlighted the lack of micro-level data as a significant issue. Gopal and Alok debated whether the initiative should be funded by the government or private capital, with Alok suggesting a mix of both. The team agreed to continue the discussion on this topic.