1. Focus Group Discussion with Students I

(19 January 2022)

NAAMII organized an hour-long Focus Group Discussion for Students on 19 January 22 as part of our ongoing project to survey the state of "AI Ethics in Nepal". The main goal of the event was to have a deeper understanding of how students foresee AI ethics and capture some of the nuances that may not be evident in the online survey. The discussion session ran for an hour and had six student participants. Most of the participants were pursuing Computer and Electronics Engineering students at the undergraduate level and had done AI projects on their own.

The discussion was moderated by the NAAMII AI Ethics team and had pre-defined broad questions to facilitate the discussion. The topics we presented in Focus Group Discussion were AI ethics, ethical concerns and risks in AI, examples of ethical AI, the biggest problem with AI in Nepal, AI courses in the student's curriculum and needs in the curriculum and addition, need or change AI-related law in now or future.

During the discussion, students suggested that human ethics should govern AI ethics, which should be adaptive, flexible and based on the scenario where the AI system works. Some ethical concerns expressed by them were in data privacy, the liability of AI products, the bias-ness of AI, and unemployment caused by AI systems. Students outlined lack of local datasets availability, unethical data collections, non-structured courses, limited access to technology, limited AI experts, lack of AI community, lack of academic-industry tie-up and lack of government focus in AI could be the biggest problems with AI in Nepal.

Students pointed out that AI courses in the Universities of Nepal are non-practical and should be re-structured based upon a solid math approach, practical and relevant field application. They also suggest that the addition of ethics from day one of the AI course could help in developing ethical and responsible AI. Students suggested that AI-related policy and the law should cover the misusage of data, data security and data collections, accountability of foreign technology companies in Nepal, Inclusion of AI Engineers in Government, and predefined liability for damages caused by AI, which should be flexible.

Overall, the event was beneficial to contextualize the initial survey results with a more focused discussion. The student participants pointed out and discussed issues of fairness and bias, accountability, robustness, safety and security. However, as a solution they often presented technical solution or a ban without considering various socio-political nuances and difficulties with defining what such a ban would look like in practice. Our discussions showed that the students were aware of many issues with AI and the gaps in their curriculum but lacked exposure to social nuances which cause many of these issues. From our perspective, AI enthusiasm has risen exponentially in recent years in university students, but many engineering students are lagging due to limited experts, old syllabus in AI courses and limited consideration of social or ethical aspects for any project.

However, our insights from this discussion are limited because all the participants came from undergraduate engineering institutions. Among the 6 participants, 5 were male. All the participants came from eastern Nepal and upper-caste background. The following sections present summaries of FGDs held with a different group of students as well as AI professionals and policymakers. All in all, the discussions help identify some shared concerns as well as conflicting opinions among these stakeholders.

2. Focus Group Discussion with Students II

(7 February 2022)

As per our project "AI Ethics in Nepal", we conducted a second focus group discussion with students on February 7 2022 to have a deeper understanding of student's views and concerns regarding AI ethics. This session was run very similarly to the first focus group discussion and followed a similar outline. The second also had six participants with two men and four women. The students were a mix of undergraduate and graduate students. Similar to the first focus group, the discussion was moderated by the AI Ethics research team and had the same pre-defined topics. The topics we presented in Focus Group Discussion were AI ethics, ethical concerns and risks in AI, examples of ethical AI, the biggest problem with AI in Nepal, AI courses in the student's curriculum and needs in the curriculum and addition, need or change AI-related law in now or future.

During the discussion, the students defined ethics as moral principles and law to govern human behavior. They further defined AI ethics as a way of defining code of conduct and regulations for engineers and developers to restrict use and application of AI in a way that maintains human dignity. When asked about ethical applications of AI, the students listed elevators for handicapped people, cyber-security related applications, AI assistance for medical diagnosis, self-driving cars, robot waiters, as well as recommendation systems. However, some participants questioned the use of robot waiters, deep fake systems, and recommendation engines as ethical applications. The discussion led to discussion among participants on how to define ethical AI. They concluded with a clarification that the use of AI should always be disclosed for ethical use and while an application can be both ethical and unethical depending on how the AI is deployed and how it interacts with humans.

The participants had a lot of concerns about AI in Nepal as well. The major ones included financial barriers, lack of technical expertise, lack of research culture in Nepal as well as a lack of trust in technology. The students were also concerned about data privacy and potential lack of fairness. Lastly, the students were concerned that the fear of missing out had made many students accept AI without any thought into discussing its problems. Lastly, the students suggested different policy

solutions in the context of AI education and policy. For their curriculum, the students wanted more focus on foundations as well as introducing projects that teach practical and real-life implications. In terms of policies, the students wanted better data transparency and usage policies, audit systems, and ethical guidelines. The students also wanted involvement of diverse and young law makers in the policy formulation. They were concerned that such policies might be copied from laws that exist elsewhere and may not be contextualized specifically to Nepal.

Overall, the students had similar concerns to the previous group regarding the curriculum. However, this group was less aware of ethical AI practice and concerns. The majority of discussion was spent talking about AI applications and the students were not as vocal about ethical issues or potential problems that may arise due to the use of AI.

3. Focus Group Discussion with Policymakers

(25 January 2022)

NAAMII organized a two-hour-long Focus Group Discussion (FGD) for Policymakers on 24 January 2022 as part of our ongoing project to survey the state of "AI Ethics in Nepal". The main goal of the event was to facilitate a discussion regarding the state of AI, AI ethics, and AI related policies in Nepal. The event was initially planned to be in-person but was adapted to virtual due to rising Covid-19 cases. There were a total of 8 policymakers and 2 team members from NAAMII. The participants were associated with Tribhuvan University (TU), Kathmandu University (KU), Pokhara University (PoU), Ministry of Education, Science and Technology (MoEST), Ministry of Communication and Information Technology (MoCIT), Nepal Academy of Science and Technology (NAST), University Grant Commission (UGC), Nepal Applied Mathematics and Informatics Institute for Research (NAAMII) and Policy Research Institute (a Government Think Tank).

The focus group was structured into four main topics of discussion - the opportunities and applications of AI in Nepal, ethical challenges with AI in the context of Nepal, AI/IT related policies in Nepal, and policies that are needed in Nepal.

In the first section, the participants discussed the classification of "Nepal" as a LMIC (Low- and Middle-Income Country) as well as an underdeveloped country. The participants suggested that AI could be useful to develop economically important sectors such as agriculture, tourism, healthcare, finance, and education and expressed dissatisfaction that very few AI/IT companies are working in those areas. The AI experts among the participants mentioned that most AI/IT companies in Nepal are working as outsourcing companies for foreign multinationals, while a few startups are working on local AI products such as Nepali chatbots, recommendation engine, etc.

When asked about the ethical challenges for AI in Nepal, majority of participants suggested that we have to find gaps and loops in the current system, which we are currently unaware of. They talked about international guidelines such as the OECD guideline, EU guideline, UNESCO guideline and guidelines published by tech-companies such as Google and Facebook. They contrasted these guidelines with a lack of the AI specific policies in Nepal. The participants listed Nepal Health Research Council's National Ethical Guidelines for Health Research 2019 and

University Grand Commision's Guideline for Research Misconduct as two main policy documents which guide research ethics in Nepal. They mentioned that these guidelines would be relevant for academic and independent AI research but would not cover corporate research or AI product development. Despite research ethics guidelines, the participants also pointed out a lack of AI ethics or Ethics literacy in formal curriculum. Some of the participants suggested including ethics as a subject in K-12 itself to create ethically minded human resources in the long run. However, other participants were not keen on this idea and reiterated a need for a national AI guideline.

In terms of AI specific policy, a participant mentioned the Science, Technology and Innovation Policy, 2019. This policy kept Artificial Intelligence as an area of priorty and has a work plan for infrastructure, development and security. The participants in the FGD unanimously agreed that this policy was not sufficient and there is a need for separate policy and an AI review board. The AI review board (for research and technology audit), that may be an organization or a governmental body or infrastructure, which helps in making AI-related policy as well as auditing research and technology products. Some of the participants compared AI review board to the consumer rights board or human rights watch organizations. The participants also stressed the need to think about AI deployed systems globally from tech giants what are their ethical aspects and what their impact is on Nepal. The participants also discussed the inherent tradeoffs between building a national framework and regulatory mechanisms for accountable AI and reducing unnecessary bureaucracy and administrative costs for an active startup ecosystem. They concluded that a National Framework is needed but should be built with the above tradeoff in consideration and with involvement of stakeholders from different groups. Lastly, the participants also talked about lack of awareness and diversity in AI technology and the need for AI literacy and awareness programs targeted to different demographics.

With this discussion, the participants recommended that we should develop our AI norms and values and AI developing procedures contextualized to Nepal. They suggested that we should make a policy regarding Surveillance Ethics, Algorithmic Transparency, and the Intellectual Property of AI. We should consider making guidelines for AI companies to follow throughout the different stages of AI development but these guidelines should be adaptive based on the use case. They suggested that we can work on ethical guidelines of responsible AI, by inter-relating health research ethical guidelines (NHRC, 2019), but they propose a National Ethical Guideline and add ethical guidelines to it.

Overall, this event was beneficial for us to understand the survey result and gaps between professionals and policymakers. Policymakers were little aware and concerned of the globally deployed AI system and its ethical aspects and impacts, but due to the exploitation of AI Talents by developed countries by outsourced business model operated in Nepal, we are lacking in developing our own AI products. They pointed out developing a governmental framework or institution, to build its policy and audit AI technology.

4. Focus Group Discussion with Professionals

(4 February 2022)

The Focus Group Discussion (FGD) with professionals was held on 4 February 2022. The target group for the discussion event was professionals working in IT industry in Nepal and the main goal of this event was to get a more in-depth understanding of their understandings and concerns about AI industry and AI ethics in the context of Nepal. The discussion ran for one and a half hours, was attended by eight participants, and was moderated by NAAMII's AI Ethics Team.

The attendees at the FGD consisted of professionals from diverse work areas such as Natural Language Processing, AI Data Transcription, Computer Vision, Drone and Robotics, and Data Science. The group also had a mix of experience levels including a company founder, senior-level manager, AI researcher, engineer, and AI curriculum developer. While diverse in work areas, the group was unfortunately homogeneous in terms of gender. Though we had invited equal number of males and females, due to scheduling conflicts, all the participants who could attend this event were male. As a result, the perspectives presented might be limited.

The discussion topics covered the participants' interest in AI ethics, ethical challenges they have seen in personal and professional life, individual, organizational, and policy interventions needed to build ethical AI, and lastly their ideas on how to build an AI Ethics community in Nepal.

The participants were very concerned about power concentration due to AI. They mentioned the need for large amount of data and resources to build better AI products and the lack of local datasets and resources in Nepal. They also talked about the risks associated with the way the majority of IT companies in Nepal sustain themselves through building outsourced products for international clients. AI can further exacerbate this risk by automating many of such jobs out of existence. The participants felt that Nepali AI tech companies have mostly been building outsourced products for short-term gain while failing to develop AI that is contextualized to Nepali community which would improve capacity in the long run. They suggested that the government should build a better policy and guidelines while building (design, development and deployment)

and buying AI systems, products and infrastructure which are expensive for low GDP countries. They felt that having products catered to needs of Nepali people would help keep stakeholders accountable and also help with building an ethical and responsible AI.

In terms of ethical problems that they have seen throughout their careers, the participants were mostly concerned about the use of data and privacy concerns. They pointed out the necessity of data sharing for the use of service in their business. The participants were aware of incidents of AI bias in the global context but did not think such bias existed in their workplace or was of immediate risk to Nepal. The participants also felt that their own ethics and moral values helped prevent biases from creeping into their work. This thread of discussion led to some contradictions and disagreement. Some participants suggested that human bias creates an AI bias, due to individual rational beliefs or choices. Some participants strongly felt about the need for AI specific guidelines and policies while others thought that adhering to individual morality and democratic values would be sufficient and the case of AI was no different than building any other product. The former group pointed out it will be too complex for us to build an AI system or autonomous system considering our democratic values, while we have an individual choice based on different cases. They pointed out that companies are using AI as a branding business model for their service and product, which may give rise to ethical issues. The latter group agreed with the need for more awareness to increase AI literacy and felt that more policies will only lead to more bureaucracy.

Another area for disagreement was in discussing the tradeoffs between improving AI model and the risk of job loss in a country like Nepal as AI models replace many outsourced jobs. This disagreement came directly from the experience of the participants. The participant concerned about potential job loss was a senior-level manager for a data annotation subsidiary of an international AI company while the participants advocating for improved AI model owned a product company for Nepali market. The latter believed that it is normal for the nature of human jobs to evolve as technology develops and this should not be an ethical concern for AI developers. Rather, it should be the government's job to plan a smooth economic transition.

To conclude, the participants iterated on the complexity of ethics related topics and the need for ongoing discussions. As a way forward, the participants had a discussion on building an AI ethics community. They suggested that such a community should include all stakeholders from Political Leaders, Social Scientists, Philosophers, University Professors who have earned integrity and respect from society. Some participants also brought ongoing trend of Nepali companies creating AI related communities as a branding and hiring tool and abandoning them once the company's need is met. The participants felt that to be sustainable an AI ethics community should be intentional in its goal without any conflict of interests. It should also have recurring events, make it free to join, and provide incentives for members to share their views freely.

Both Professionals and Policymakers are aware that majority of Nepali AI companies and professionals do outsourced works and are concerned about potential of power concentration and labor exploitation by multinational companies. Both professionals and policymakers agree on the need for ethical guidelines and policy for AI. The majority of professionals are aware of global issues, but unaware of how those issues may manifest in their own jobs. They believe that it is necessary for diverse stakeholders to come together and take responsibility. Students and

Professionals have had similar views about data, privacy, liability, fairness and bias, accountability, safety and limitedness of AI resources in Nepal but students are concerned about their updating old curriculum and adding ethical aspects of AI in it. Professionals felt that curriculum can never be enough and it is more important to learn on the job and provide adequate opportunities for younger generation to do so.