

**UNIVERSITY OF OXFORD**  
**DEPARTMENT OF EDUCATION**

15 Norham Gardens, Oxford OX2 6PY  
Tel: +44(0)1865 274024 Fax: +44(0)1865 274027  
general.enquiries@education.ox.ac.uk www.education.ox.ac.uk

**Director** Professor Jo-Anne Baird  
Tel: +44(0)1865 274002 Jo-Anne.Baird@education.ox.ac.uk



To whom it may concern,

It gives me immense pleasure to recommend Aban Hasan, who has undergone the three-month Artificial Intelligence Internship Program under my guidance, for admission to your reputed institution. It was during my interactions with Aban that he described his proposed project to me and also presented his completed project.

Throughout our engagement, I was impressed by his project, and particularly his goal of using AI and Machine Learning to provide a service for the community by creating an app called '**Sentiment Analysis App**' that helps all differently-abled people in the community, the elderly, and technological novices access technology. I was delighted to see that Aban, at the age of sixteen, has developed skills and a passion to innovate and solve real-world problems.

He creatively used Tweepy, NLP, Machine Learning and Flask libraries in Python and succeeded in completing his project. When he encountered technical difficulties in his project, he very wisely tried to follow suggestions in the Python reference material, and when that failed, he went to Stack Overflow and to GitHub sites to look at community forums for his answers. He managed every component of his project very beautifully and everything is in working order. As the next step, he could develop the project with an automated system that could identify biased or fake reviews on products or services and is able to deal with sarcasm or acronyms like text or sentences. As of now, it can detect the sentiments from sentences and classify them into positive and negative sentiments.

Given that he only had three months to conceive, implement, and present the project, I was impressed by his efforts to integrate all of the planned components into the project.

From the other instructors, I have heard that Aban is a diligent and disciplined student. He has a very clear understanding of the concepts and does not hesitate to ask questions to clear his doubts. He possesses a curious and growth mindset that has enabled him to understand every coding concept and connect them to create useful apps. He doesn't get disappointed when there is an error in the code; instead, he feels all the more motivated to solve it. He has a lot of patience and yet is enthusiastic to take on new challenges. Aban's thoughts are sorted which helps him to create projects that are meaningful and that address real-life problems. He is filled with energy and also channelizes his energy in a creative way. When he takes on something, he puts his heart and soul into completing it the way he had envisioned it. That is what he did for his internship project. He never shies away from asking for help and he is a great team player too!

I don't doubt any of this.

If I can be of any further assistance, or provide you with any further information, please do not hesitate to contact me.

Best regards,

A handwritten signature in black ink that reads 'Ken M. Kahn'. The signature is written in a cursive style with a large 'K' and 'H'.

Dr. Ken Kahn, Senior Researcher(Retd.), Department of Education, University of Oxford

30/10/2022