

May 16, 2024

US Department of Homeland Security

Citizenship and Immigration Services

RE: Urmila Ravichandran

Dear Examiner,

It is with great pleasure that I write this letter of commendation for Ms. Urmila Ravichandran, who I have found to be an exemplary academic and professional in my engagements with her over the past 3 years. Ms. Ravichandran is well respected in the Data Science community, with a record of delivering innovative and meaningful data-driven solutions to healthcare challenges for more than 7 years. Specifically, Ms. Ravichandran possesses unique expertise in leveraging machine learning, statistical analysis, generative AI and other data science technologies to improve health equity. Her research discoveries and innovations not only enrich patient care, but also provide a model for championing health equity and accessibility across the healthcare industry at large.

Though the majority of my time interacting with Ms Ravichandran has been professional, this letter of recommendation is from me personally. My name is Dr Calum Yacoubian. I am the Director of AI and Technology Healthcare strategy at IQVIA. I am a medical doctor, having trained and practiced in the National Health Service in the UK. Following this, I have now spent 10 years working in healthcare artificial intelligence and technology. My current employer, IQVIA, is a multinational health information technology and clinical research organization. My current role oversees product strategy for healthcare data transformation in healthcare. Before joining IQVIA in 2020, I served as a Physician Account Manager in Life Sciences for Clinithink, where I was responsible for the implementation of new technology in Clinithink's global healthcare network. Prior to taking on the Physician Account Manager position, I was a Clinical Terminologist. Before Clinithink, I worked for the National Health Service in Greater Glasgow and Clyde as a medical doctor specializing in clinical medicine. I hold an MD and a Bachelor of Medical Science in Clinical Research from the University of Glasgow.

From my engagements with Ms. Ravichandran I can see that she devotes her professional attention and energies to applying Data Science to Healthcare for patient benefit. To speak

broadly, Data Science is an interdisciplinary field that involves extracting insights & knowledge from data through various scientific methods, algorithms, & systems. It encompasses a wide range of techniques, including statistical analysis, machine learning, data mining, & visualization, to uncover patterns, trends, & correlations within datasets. The field's overarching goal is to generate actionable insights & facilitate informed decision-making across diverse domains.

Ms. Ravichandran uses advanced computational methods to extract insights from extensive healthcare datasets. She aims to enhance outcomes through predictive analytics, early intervention, and preventive strategies. I have witnessed the excellence with which she works effectively within multidisciplinary teams – encompassing clinicians, IT specialists and 3rd party companies. This collaboration has led to patient impact within the organization she is employed at, the results of which she has presented at international conferences – such as HIMSS 2023 (Health Information and Management Systems Society) – the largest healthcare conference in the world.

One of Ms. Ravichandran's achievements that I am most familiar with – having attended conferences that she has presented this work on – is the collaboration that she was a critical contributor on which used AI to improve management of patients based on their social determinants of health. In this work, Ms. Ravichandran worked with NLP technology from IQVIA, colleagues in the IT team at her employer, social workers and innovation sponsors to enable insights derived from AI to make an impact on patients being seen in the Emergency Department. Using her expertise, Ms Ravichandran was able to optimize the NLP technology for her employer's needs, incorporating feedback from the social workers using the output of the AI. This process ultimately led to data being captured on 300 times more patients than her employer had previously accounted for, and a 56% increase in the number of patients that social workers could screen.

Ms. Ravichandran's work earned a spotlight at numerous national and international healthcare analytics conferences, including the 8th Annual Chicago Bioinformatics Data Jam, the IQVIA National NLP Summit 2022, and the 2023 HIMSS conference. IQVIA's technology that was showcased in Ms Ravichandran's work was selected as Best AI-Based Solution for Healthcare at the 2023 AI Breakthrough Awards.

Urmila Ravichandran's application of Data Science to healthcare is novel and creative. Her work demonstrates not only her own expertise but also the impact Data Science makes outside of its own field. From my personal perspective, she plays a very important role in the innovation success that her employer achieves.

Best Regards,

A handwritten signature in black ink, appearing to read 'Calum Yacoubian'. The signature is fluid and cursive, with the first name 'Calum' and last name 'Yacoubian' clearly distinguishable.

Calum Yacoubian, MD
Director NLP Healthcare Strategy
IQVIA