Shaykh Jaffer Ladak – Islamic Seminary of Kerbala

Sheikh Jaffer was born and raised in Milton Keynes, UK. After two years in medical recruitment, he opened his own agency in 2005 and subsequently appointed director of the DRC Group, the second largest agency supplying locum doctors to the NHS in the UK, leaving in 2011. After returning from Hajj in 2005, he began his Islamic studies, speaking in centres around the world, leading Ziyaarat and Hajj groups. He has studied at Jaami'a Imam as-Sadiq (a) of Ayatollah al-Qazwini, Hawza Imam al-Jawad (a) of Grand Ayatollah Syed Taqi al-Modarresi in holy Kerbala and Al Mahdi Institute, Birmingham. He has authored two books, The Hidden Treasure (2011) and The Ways of The Righteous (2015) with various other written works in the pipeline. He is currently the Resident 'Alim of Hyderi Islamic Centre, London and completing his Masters Degree in Islamic Law at the Islamic College, London.

Dr Mohammad Ghassemi – Massachusetts Institute of Technology

Mohammad Ghassemi is a doctoral candidate at the Massachusetts Institute of Technology. As an undergraduate, he studied Electrical Engineering and graduated as both a Goldwater scholar and the University's "Outstanding Engineer". Mohammad later pursued an MPhil in Information Engineering at the University of Cambridge where he was a recipient of the prestigious Gates-Cambridge Scholarship. Since arriving at MIT in 2011, he has pursued research which has allowed him to leverage his knowledge of machine learning and background in hardware/sensor design to enhance critical care medicine. Mohammad's doctoral focus is machine learning techniques in the context of multi-modal, multi-scale datasets

ABSTRACT: "Augmented and Artificial Intelligence in Usul al-Fiqh: The scope for perfect computational reasoning in Ijtehad"

Advances in the computer sciences, and particularly artificial intelligence, have had a profound impact on secular jurisprudence. In the United States, criminal sentencing is augmented through algorithms that consider behavioural and circumstantial factors to determine probabilities of criminal recidivism.[1] Algorithm-assisted jurisprudence is theoretically attractive because machines are not prone to the biases, moods, and inconsistencies that may confound their human counterparts. Furthermore, prior findings in the psychological sciences suggest that human biases may reside within the subconscious, making their presence difficult to detect, and the extent of their influence difficult to know. The immunity of the machines to these bias may enable more perfect judicial reasoning, and promote a more consistent system of justice.

For the purposes of the Islamic sciences, and particularly jurisprudence, the implications of artificial intelligence are also thrilling, but have been under-utilized to date. Existing Islamic software is designed to either enhance the pace of scholarly inquiry (e.g. allowing theologians to search the vast literature for key terms, or concepts), or quantify the historicity of the literature (e.g. analysis of chains of narration). To our knowledge there have been no applications of artificial intelligence for the purposes of Islamic jurisprudence. Importantly, the probabilistic nature of artificial intelligence techniques fit naturally within the existing frameworks of Usul al-Fiqh,[2] and Ijtehad, which rely on epistemic degrees of certainty: (Yaqeen), surety (Itmi'naan) and high probability (Dhann Mo'tabar).

This paper conceives of the inclusion of machine reasoning in Usul al-Fiqh, driving the sciences of Islamic jurisprudence to a new epoch. Augmented reasoning, or supervised learning, working from any number of a-priori assumptions may radically evolve the procedures of resolving contentions (Bab at-Tazahum) and contradictions (Bab at-Tanaqudh). Given the employment of perfect reasoning and potential for unlimited time-invariant computations, supervised learning may demonstrate to the legal practitioner (Mujtahid) every potential scenario of reasoning given the minutest modification of assumptions, but also reveal the flaws inherent in imprecise human reasoning. Though focusing on the effects of augmented and artificial reasoning in Usul al-Fiqh, the paper will also explain how machine reasoning may benefit other sciences such as the higher aspirations of the Divine Law (Maqasid as-Shari'ah) and the science by which to understand hadith literature ('Ilm al-Dirayah).

In order to demonstrate the practical benefit of augmented reasoning, the paper will assume one legal issue (Mas'alah): that of the patriation of religious endowment (Waqf) to the authority of the jurist and contrast present legal reasoning of its restitution and employment, against perfect reasoning and the interminable number of scenarios it may provide guidance on in the decision making of the legist. In doing so, we aim to provide a clear example of how machine reasoning may offer a more accurate employment of Islamic jurisprudence in various fields of law.