12 February 2023
Dhaka, Bangladesh

*** This SOP did not actually lead to getting a full scholarship. I was offered tuition-free admission, and a smaller stipend of 300 Euros per month ***

To the Intermaths Selection Committee:

I am Meem Arafat Manab, a lecturer from the Department of Computer Science and Engineering at the School of Data and Sciences of BRAC University. I am applying for this year's Erasmus Mundus Joint Master in Interdisciplinary Mathematics (Intermaths). If selected and provided a scholarship, my goal is to follow this master's degree with a Ph.D. and use the Intermaths experience and learning for future research in the confluence of machine learning, data science, and artificial intelligence.

I originally studied at the University of Dhaka in its Department of Computer Science and Engineering as an undergraduate student. My undergraduate education provided me with a strong understanding of the rigorous and mathematical foundations of computer science, with a parallel experience in competitive programming. I also voluntarily worked for the Bangladesh Mathematical Olympiad, traveling across the country to provide free mathematics classes for high school students. Meanwhile, I had taken a keen interest in human rights advocacy at that time, actively participating in campaigns and activisms that prioritized human rights, environment, and democracy. My graduation was afterward followed by a break from educational pursuit or a fixed job, when I worked in several contractual and freelance positions, from short-term temporary consultancy at the World Bank Group's South Asian Unit of Climate Change and Disaster Risk Management to research assistance at a minority rights advocacy organization. After one and a half years of my "pre-career sabbatical", I moved to Japan for a three-month training in data science, artificial intelligence, and machine learning at Fujitsu Research Institute in Tokyo. This was followed by my two-and-a-half years of teaching experience at BRAC University, where I teach mathematics and CS courses and co-lead a research team. Joining academia was a crucial turning point in my life, bringing together my unbridled passion for research, my varied interdisciplinary interests, and my commitment to training younger generations as previously evidenced during my work for the Mathematical Olympiad.

My research projects bifurcate into two correlated directions: one is on how artificial intelligence intersects with social sciences and humanities, redefining social norms and practices through the adoption of new technologies, while another is on how we can improve machine learning and other mathematical models for different types of data. Some of my team's works have been presented at Central European University, Austria, and published at conferences in Italy, the United States, and Bangladesh. Among our current research topics are the interaction of artificial intelligence and pedagogy, uncertainty analysis of machine learning models, nonlinear dimensionality reduction of large data sets, devising new evaluation metrics for machine learning tasks, medical imaging analysis using domain-specific neural network architecture, low-cost image compression for sustainable computing and using A.I. to detect air quality from smartphone-captured images.

With my involvement in multiple research areas, I have always been open to implementing new ideas and thinking outside the established paradigm, which is part of why I want to pursue a prestigious master's degree before embarking on a Ph.D. This might conventionally be seen as a step backward, but I believe this would open more windows for collaboration and give me the opportunity to explore more before embarking on a Ph.D. track. Besides, I would like to focus on one problem pertaining to artificial intelligence by the end of the master's, from which my current association with a multitude of projects is preventing me. Living in Europe would mean being in the academic and cultural epicenter of the world, and with my strong knowledge of Spanish and limited knowledge of French and German, I have reasons to believe that it would be substantially easier for me in terms of integration, at least in terms of language. Most importantly, an Erasmus Mundus

scholarship with admission into the Intermaths program would be a dream come true, given the prestige of the scholarship and the superior quality of the partner universities.

Best regards
Meem Arafat Manab
Lecturer, Department of Computer Science and Engineering, School of Data and Sciences, BRAC University

**** This letter also led to a total rejection ****

To the EMAI Selection Committee:

I am Meem Arafat Manab, a lecturer from the Department of Computer Science and Engineering at the School of Data and Sciences of BRAC University. I am applying for this year's Erasmus Mundus Joint Master in Artificial Intelligence (EMAI). If selected and provided a scholarship, my goal is to follow this master's degree with a Ph.D. and use the EMAI experience and learning for future research in the confluence of machine learning, data science, and artificial intelligence.

I originally studied at the University of Dhaka in its Department of Computer Science and Engineering as an undergraduate student. My undergraduate education provided me with a strong understanding of the rigorous and mathematical foundations of computer science, with a parallel experience in competitive programming. I also voluntarily worked for the Bangladesh Mathematical Olympiad, traveling across the country to provide free mathematics classes for high school students. Meanwhile, I had taken a keen interest in human rights advocacy at that time, actively participating in campaigns and activisms that prioritized human rights, environment, and democracy. My graduation was afterward followed by a break from educational pursuit or a fixed job, when I worked in several contractual and freelance positions, from short-term temporary consultancy at the World Bank Group's South Asian Unit of Climate Change and Disaster Risk Management to research assistance at a minority rights advocacy organization. After one and a half years of my "pre-career sabbatical", I moved to Japan for a three-month training in data science, artificial intelligence, and machine learning at Fujitsu Research Institute in Tokyo. This was followed by my two-and-a-half years of teaching experience at BRAC University, where I teach mathematics and CS courses and co-lead a research team. Joining academia was a crucial turning point in my life, bringing together my unbridled passion for research, my varied interdisciplinary interests, and my commitment to training younger generations as previously evidenced during my work for the Mathematical Olympiad.

My research projects bifurcate into two correlated directions: one is on how artificial intelligence intersects with social sciences and humanities, redefining social norms and practices through the adoption of new technologies, while another is on how we can improve machine learning and other mathematical models for different types of data. Some of my team's works have been presented at Central European University, Austria, and published at conferences in Italy, the United States, and Bangladesh. Among our current research topics are the interaction of artificial intelligence and pedagogy, uncertainty analysis of machine learning models, nonlinear dimensionality reduction of large data sets, devising new evaluation metrics for machine learning tasks, medical imaging analysis using domain-specific neural network architecture, low-cost image compression for sustainable computing and using A.I. to detect air quality from smartphone-captured images.

With my involvement in multiple research areas, I have always been open to implementing new ideas and thinking outside the established paradigm, which is part of why I want to pursue a prestigious master's degree before embarking on a Ph.D. This might conventionally be seen as a step backward, but I believe this would open more windows for collaboration. Besides, I would like to focus on one problem pertaining to artificial intelligence by the end of the master's, from which my current association with a multitude of projects is preventing me. Living in Europe would mean being in the academic and cultural epicenter of the world, and with my strong knowledge of Spanish, I have reasons to believe that the first semester would be easier for me in terms of integration. Most importantly, an Erasmus Mundus scholarship with admission into this program

would be a dream come true, given the prestige of the scholarship and the superior quality of the partner universities.

I will look forward to hearing from you soon.

Best regards
Meem Arafat Manab
Lecturer, Department of Computer Science and Engineering
School of Data and Sciences, BRAC University

*** This SOP got me to EMILDAI ***

To the EMILDAI Selection Committee:

I am Meem Arafat Manab, a lecturer from the Department of Computer Science and Engineering at the School of Data and Sciences of BRAC University. I am applying for this year's Erasmus Mundus Joint Master Degree (EMJMD) Programme European Master in Law, Data and A.I. (EMILDAI). If selected and provided a scholarship, my goal is to follow this master's degree with a Ph.D. and use the EMILDAI experience and learning for future research in the confluence of machine learning and big data.

I originally studied at the University of Dhaka in its Department of Computer Science and Engineering as an undergraduate student. My undergraduate education provided me with a strong understanding of the rigorous and mathematical foundations of computer science, with a parallel experience in competitive programming. I also took a keen interest in human rights advocacy from then onward, actively participating in campaigns and activisms that prioritized human rights, the environment, and democracy. My graduation was afterward followed by a break from educational pursuit or a fixed job, when I worked in several contractual and freelance positions, from short-term temporary consultancy at the World Bank Group's South Asian Unit of Climate Change and Disaster Risk Management to research assistance at a human rights advocacy organization. These contract-based and disparate jobs had only one thread in common: they all were some sort of research work, where "research", in its broadest sense, meant "inventive and structured work undertaken to expand the current pool of knowledge", may that knowledge be quantitative or qualitative. After one and a half years of my "pre-career sabbatical", I moved to Japan for a three-month training in data science, artificial intelligence, and machine learning at Fujitsu Research Institute in Tokyo. My return immediately preceded the outbreak of the COVID-19 pandemic, and it was during the pandemic that I joined BRAC University first as a part-time and then one year later as a full-time lecturer. Joining academia was a crucial decision in my life, bringing together my unbridled passion for research, my varied interdisciplinary interests, and my commitment to training younger generations as previously evidenced during my work for the mathematical olympiad.

My research projects bifurcate into two correlated directions: one is on how data science intersects with social sciences and humanities, redefining social norms and practices through the adoption of new technologies, while another is on how we can improve machine learning models for different types of data. Some of our works have been presented at Central European University, Austria, and published at conferences in Italy and Bangladesh. Among our current research topics are uncertainty analysis of machine learning models, the historical bureaucratic influences on data science, and exploring the reliability of artificial intelligence for education platforms. I believe data to be the newest parameter of human rights after our bodies and material properties, and all my research works, in one way or another, are about exploring either the impact or the manipulation of data.

With my involvement in multiple research areas, I have always been open to implementing new ideas and thinking outside the established paradigm, which is part of why I want to pursue an interdisciplinary master's degree before embarking on a Ph.D. A research direction I would like to pursue is how human rights are being continuously reshaped by the newer advances in artificial intelligence. Two important sources I am currently reading up on regarding this are the works of Paul Cockshott (especially, his Computation and its Limits) and Lawrence Lessig (especially, his Code: Version 2.0). I am also interested in exploring how the marginalized, play into factors while doctoring new laws for this new technology-ridden world. Coming from a country with

repressive digital laws that curb people's freedom of expression, these are at once personal and professional issues for me.

I will be looking forward to hearing from you soon. Studying in Ireland and Spain would be a dream come true opportunity, as these are two countries I have been enthralled by due to their extensive body of literature since my early university years. Those were the days my programming life was interlaced with a year-long reading of Ulysses and Don Quixote.

I would also like to add that I have attached my Spanish DELE A2 results (94.99 out of 100) in the attachment section, as my DELE B1 results are due to be published in February.

Best regards
Meem Arafat Manab
Lecturer, Department of Computer Science and Engineering
School of Data and Sciences, BRAC University