

# MICHIGAN STATE UNIVERSITY

August 13, 2024

To Whom It May Concern,

On behalf of the Department of Computer Science and Engineering at Michigan State University, I am pleased to endorse Yihua Zhang's application for the 2024 IBM Fellowship Award. Since January 2022, Yihua has been pursuing his PhD under the supervision of Prof. Sijia Liu. His dissertation, titled "Scalable and General Optimization Strategies for Trustworthy Machine Learning: Foundations and Applications," addresses critical issues in trustworthy and scalable machine learning, where he has made substantial foundational and practical contributions. In our department, Yihua Zhang has distinguished himself as the leading scholar among his peers, achieving the highest rank.



## College of Engineering

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Firstly, Yihua's innovative research in machine learning, particularly in the areas of trustworthiness and efficiency of foundational models, has established him as a rising star in the field. His recognition with the prestigious nationwide MLCommons Rising Star Award 2024 is a testament to this achievement. Since beginning his PhD in January 2022, Yihua has reached milestones that typically take years to accomplish. He has accumulated 429 citations and an h-index of 11, contributing over 20 papers to elite conferences such as NeurIPS, ICML, and CVPR, with 11 of these as the lead author. Furthermore, his receipt of numerous travel grants and scholarly awards from these conferences speaks to his intellectual depth and proactive approach to addressing significant challenges in artificial intelligence. These contributions have not only advanced the field but have also significantly enhanced the reputation and prestige of our department.

Secondly, Yihua Zhang is an exemplary candidate for the IBM Fellowship Award 2024, bolstered by his ongoing collaboration with IBM Research, nurtured by the supportive mentorship of Prof. Sijia Liu. Notably, as the lead student author of the MSU-IBM team, Yihua earned significant recognition with the Best Paper Runner-Up Award at the 38th Conference

on Uncertainty in Artificial Intelligence (UAI) in 2022 for his paper "Distributed Adversarial Training to Enhance the Robustness of Deep Neural Networks at Scale." This achievement highlights his distinctive strengths and makes him an excellent fit for the IBM Fellowship. Receiving this award would not only honor his individual contributions but would also deepen the collaborative ties between IBM, Yihua, and the CSE department at Michigan State University, promising to yield further impactful research and innovation.

Thirdly, Yihua Zhang's dedication to fostering an inclusive academic community is another remarkable aspect of his candidacy. As a PhD student, he has effectively led several workshops as a student chair, delivered tutorials at major conferences, and served as an outstanding reviewer at prestigious venues such as CVPR and NeurIPS. His proactive engagement in these roles advances the field and improves his mentorship skills, having guided over five undergraduate and graduate students. Most impressively, many of these mentees have achieved fruitful research outcomes (e.g., publications), a testament to the quality of his mentorship and his significant influence on the next generation of scholars. Yihua's leadership and active participation in these capacities underscore his integral role in shaping the future of computer science research and education. His goal of becoming a successful faculty member after graduation further emphasizes his long-term commitment to meaningfully contributing to the academic community.

Lastly, it is noteworthy that Yihua has recently embraced the role of fatherhood, introducing significant new personal responsibilities. Despite these added challenges, he has shown exceptional resilience and dedication. According to his advisor, Yihua has balanced the demands of his professional and personal life, maintaining impressive productivity in his research. His ability to navigate these complexities profoundly inspires his peers and mentees, fostering a culture that values support and respect for diverse life experiences. Yihua's capacity to excel in the face of challenges underscores his commitment to creating a supportive and inclusive academic community.

In conclusion, Yihua Zhang's exemplary academic record, community service, and personal resilience make him an outstanding 2024 IBM

Fellowship Award candidate. I wholeheartedly support his application and am confident in his continued success and contributions to the field.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Esfahanian', followed by a long horizontal line.

Abdol-Hossein Esfahanian,  
Professor and Chairperson