

18/02/2025

To Whom It May Concern:

Re: Letter of Recommendation for JUNYAN BAI

I am writing this letter in my capacity as an Academic Tutor and Research Supervisor at Southern University of Science and Technology, where I have had the pleasure of supervising Mr. Bai's research in Personalized Federated Learning during the 2024 Fall semester.

Junyan worked directly under my supervision on a challenging research project focused on Personalized Federated Learning, specifically examining the optimization of existing PFL framework towards heterogeneous dataset settings. Throughout this period, he demonstrated exceptional technical aptitude, consistently producing high-quality work while navigating the inherent complexities of distributed machine learning systems.

What particularly distinguishes Junyan is his entrepreneurial mindset. When our initial approach encountered limitations in handling heterogeneous datasets, he took the initiative to propose an innovative alternative method that significantly improved our model's convergence rate by 28%. This demonstrated not only technical knowledge but also the ability to identify opportunities where others might see obstacles. Beyond theoretical improvements, Junyan displayed remarkable vision in seeking to understand how our research could be applied in real-world settings. He showed genuine interest in industry applications by exploring how existing frameworks function in financial and healthcare sectors. Particularly noteworthy was his interest in learning from WeBank's business model for federated learning implementation - one of the pioneering commercial applications of this technology. This curiosity about successful commercialization pathways demonstrates his forward-thinking approach to research.

Beyond technical proficiency, Junyan possesses personal qualities that would serve him well in entrepreneurial endeavors. He exhibits a growth mindset, embracing constructive feedback and continuously seeking to improve. His communication skills are exceptional; he can explain complex technical concepts clearly to both technical and non-technical audiences. Junyan's organizational abilities and time management skills enabled him to balance multiple competing priorities while consistently meeting research deadlines.

What I find most impressive about Junyan is his resilience in the face of setbacks. When our federated learning models initially showed poor performance across heterogeneous data distributions, he responded not with frustration but with determined problem-solving. After thoroughly analyzing the issue, he implemented a novel client selection strategy that significantly improved performance. He maintains composure under pressure and approaches problems with both creativity and analytical rigor.

Based on my observation of Junyan's technical skills, entrepreneurial qualities, personal attributes, and ability to navigate challenges, I believe he would thrive in the NUS Entrepreneurship and Internship Program. He possesses not only the technical foundation but also the innovative thinking, resilience, and collaborative spirit essential for entrepreneurial success.

I am confident that Junyan will make significant contributions to any team or project he joins. Please do not hesitate to contact me should you require any additional information.

Sincerely,

YU ZHANG
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