Bassel El Mabsout ◇ Cover Letter

Hiring Committee Robotics Department Mohamed bin Zayed University of Artificial Intelligence
Abu Dhabi, United Arab Emirates

Dear Members of the Search Committee,

I am writing to apply for the Open Rank Faculty position in the Robotics Department at Mohamed bin Zayed University of Artificial Intelligence (MBZUAI). Currently completing my doctoral studies in Computer Science, I offer expertise in reinforcement learning for robotic control systems, formal verification methods, and efficient robot algorithms that align perfectly with MBZUAI's focus on innovative AI and robotics research.

My research focuses on bridging what I term the "intent-to-reality gap" in robotic systems - the challenge of translating high-level objectives into reliable robot performance. This work has produced multiple significant contributions: Including the RE+AL framework, which demonstrated the first reinforcement learning controller to outperform traditional PID controllers on racing quadrotors, and the CAPS regularization technique, which achieved an 80% reduction in power consumption while maintaining performance. These accomplishments demonstrate my ability to conduct the transformative, high-impact research MBZUAI values.

Looking forward, I aim to expand this work through my Fulfillment-centric Logic framework, which provides formal guarantees for learning-based control systems as well as forming the basis of a new generation of expressivity for reinforcement learning. This research direction offers opportunities for cross-disciplinary collaboration within MBZUAI's departments of Computer Vision and Machine Learning, creating the kind of integrative research environment that distinguishes leading AI institutions. My publication record in top-tier venues like ICRA and ACM Transactions on Cyber-Physical Systems demonstrates my commitment to rigorous, peer-reviewed research.

My teaching philosophy emphasizes hands-on experimentation and critical analysis of current research literature. This approach has proven successful through building the F1Tenth Racing Team to second-place competition finish and mentoring students whose work reached publication at ECCV. I am prepared to contribute to both graduate and undergraduate instruction in areas including robot control, formal verification methods, and reinforcement learning.

MBZUAI's position as a young, ambitious institution working to establish Abu Dhabi as an AI hub presents an extraordinary opportunity to help shape a nascent robotics department. My success with proposal writing, including contributions to NSF grants and winning the Best Demonstration Award at TII's GenZero Workshop in Abu Dhabi, positions me to help expand your research portfolio and international collaborations. I am particularly drawn to MBZUAI's commitment to diverse perspectives, with faculty and students representing over 40 nationalities.

Thank you for considering my application. I look forward to discussing how my research vision and teaching approach align with MBZUAI's goal of becoming a global leader in AI education and research.

Sincerely,
Bassel El Mabsout