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To Whom It May Concern:

It is my pleasure to recommend Kenechukwu Ezeifemeelu for the Master's program in Analysis and Design using Composite Materials. I am an Assistant Professor of Engineering at New York University Abu Dhabi, and affiliated with the Mechanical and Aerospace Department at the Tandon School of Engineering of NYU. I have known Kenechukwu since January 2022. Since then, I have got to know Kenechukwu in three capacities: 1) as a student in my class, 2) as a student in the Capstone Project that I supervise and 3) as a Research Assistant in my Computational Solid Mechanics lab. Since our first interaction, Kenechukwu has distinguished himself as an outstanding student who possesses a distinctively critical thinking style. In addition, Kenechukwu has always shown a consistent hardworking attitude that guaranteed him a continuous research position in my research group. Overall, I would rank Kenechukwu in the top tier of students that I have taught and worked with throughout my career.

Kenechukwu has taken my Partial Differential Equations for Engineers course. He was one of the few students who received an A in this class. In the classroom, Kenechukwu was always attentive; he was always focused and following the learning material with extreme interest. Kenechukwu is also highly intelligent, in many cases, he would be asking questions beyond the material being explained while his peers are still struggling to understand. He was also very punctual and disciplined, he has never missed a deadline or requested an extension to submit his assignments or class projects.

I had an opening for an undergraduate researcher over the Spring of 2022. The research project was focused on machine learning models for fracture and damage mechanics modeling, which is an advanced topic for an undergraduate researcher. Kenechukwu proactively applied for this position and I was happy to take him to join my lab as an undergraduate Research Assistant (RA). Throughout this project, Kenechukwu has managed to develop and run machine learning models, and topology optimization codes. Kenechukwu continues to work with me to this date, and his work has a viable publication potential.

In the capstone project, Kenechukwu is currently working on the investigation and optimization of the performance of longitudinal crash bars which are a common feature in automotive design. The project aims to optimize the crash bar design by minimizing its cost and weight while maximizing the crash resistance stiffness and energy dissipation. The work involves review of existing designs (including materials, geometry, etc...), developing non-linear explicit dynamics models in ANSYS to assess the response of current design, coming up with new optimized designs, and prototyping and experimental testing. The current design prototype is a composite metal-foam system with honeycomb reinforcement. Kenechukwu is showing excellent engineering abilities through all aspects of the technical work. In addition, while being an excellent team-member, he is assuming a leadership role with respect to the management of the project activities between his colleagues.

In terms of specific skills, based on my experience, Kenechukwu is currently proficient in programming using Python and MATLAB. Also, Kenechukwu has an excellent command of ANSYS Mechanical which

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he is heavily using in his capstone project. Kenechukwu has also been a very good communicator. He has organized thoughts and knows how to well-communicate them.

To sum up, I believe that Kenechukwu would be an excellent graduate student and a future engineer. Once given a chance, I am sure that he will capitalize on it and make it the beginning of successful career.

Yours sincerely,

Mostafa Mobasher