

Christoph M. Hoffmann  
Professor Emeritus of Computer Science  
Purdue University

December 30, 2021

Department of Mathematics and Physics  
University Roma Tre.

Dear Department Leadership:

I have been asked to give an opinion of the work and stature of Professor Alberto Paoluzzi who is retiring from his professorship in your department. It is a pleasure to do so, and before I go into details let me preview my opinion: Professor Paoluzzi is a highly accomplished member of your community and well known internationally for his seminal work founding and developing the topological approach to solid modeling. Were he to mention that your department refused to honor his contributions to science and education, we who know his work and its importance would be perplexed. It would be difficult to understand that a researcher of his stature would be denied the honorific title of emeritus.

Professor Paoluzzi is a pioneer of Computer Aided Design. His work, more precisely, is in Solid Modeling. (I skip formal definitions, e.g. of solids: Paoluzzi's work contains all that material and more). His work takes a principled approach, seeking to develop a topological calculus from which to derive both a representation and a correctness proof of shapes. It is not limited to three dimensions.

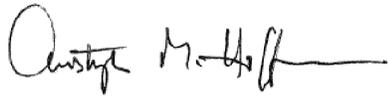
Professor Paoluzzi's approach has produced several celebrated methodologies of modeling. They are of great importance since the systems adopted by industry do not have a widely applicable semantics. Therefore, the CAD systems will, and must, on occasion fail on correct input. All this is well known in the field and Professor Paoluzzi's systems study if and how such imperfections might be overcome. Let me add that it is customary in our research to implement one's ideas and demonstrate their efficacy.. This practical aspect of the work can slow down progress, but perusing Paoluzzi's CV quickly shows that this is not the case here. Staying near implementations has another consequence: industry values our students and pays a premium for hiring them. Summarizing, Professor Paoluzzi has contributed significantly to the field. His work is prized. His productivity is remarkable. There is no question that he deserves the emeritus.

Reflecting on Professor Paoluzzi's life work, I have been at a loss understanding why a university of such renown could entertain any doubts that a man of Paoluzzi's stature somehow should not be awarded the emeritus honor. Trying to read between the lines, I wonder if the move from LaSapienza to RomaTre is somehow involved. Recall that the purpose of the move was to help with the development of a degree program in Computational Science and Engineering: Such a degree program is clearly timely and of growing need. Like Roma Tre, Purdue University also developed such a program. Over time, however, our program withered on the vine. More than that, all the other such programs that I am familiar with across the US I have seen have drifted. At the core is the difficulty of how to evaluate the work done in that program. The work has to be

judged by domain expertise, contributed by faculty who already have a firm footing in their respective traditional programs. For example, assume that faculty A in mathematics were to judge work that is mathematically sound and has a large implementation as well. Then A might simply say the work is good but the implementation is distracting. Faculty B, in an engineering department might judge the theoretical part less important and consider the implementation the main contribution. As you might agree with me, such situations could, over time, lead to arguments even among men of good will. I assure you that the evaluation of cross-disciplinary work is not a simple one. In the normal course of events some group of disciplines become dominant and the program loses balance. I look at the current evaluation of Professor Paoluzzi in this way.

Let me then give you then my own judgment: Professor Paoluzzi is an extraordinarily accomplished researcher who is leader in his field and without question deserving the honor of professor emeritus in recognition of his work.

---

A handwritten signature in black ink, reading "Christoph M. Hoffmann". The signature is written in a cursive style with a long horizontal stroke at the end.

Christoph M. Hoffmann