

**Name of the advisor: Paweł Pilarczyk****Academic title:** PhD. D.Sc.Orcid ID number: **n/a****Department of Differential Equations and Mathematical Applications****Faculty of Applied Physics and Mathematics****Gdańsk University of Technology**Phone: **n/a**E-mail: **Pawel.pilarczyk@pg.edu.pl**Personal web page: <https://www.pg.edu.pl/pawel.pilarczyk/>Discipline<sup>i</sup> **mathematics****Bibliometric indicators**

1.	Number of journal publications in WoS/ Scopus	25
2.	Citations (WoS/Scopus) excluding self-citations	233
3.	Hirsch index (WoS/Scopus)	8
4.	Hirsch index in Google Scholar	n/a
5.	Citations in Google Scholar	n/a

1. The number of PhD students who have graduated under your supervision: 0
2. The number of PhD students currently supervised: 0
3. Are you currently accepting new PhD students:
  - a. Polish YES
  - b. Foreign YES

**Research interests or topics offered for PhD research (no more than 2000 characters)<sup>ii</sup>**

In general, my research interests focus on the field of qualitative theory of dynamical systems, either with continuous time, or with discrete time. In particular, I am especially interested in using computer algorithms together with topological methods for investigating invariant sets of dynamical systems. A theoretical tool that proves to be useful for this purpose is the Conley index (a generalization of the Morse index, based upon the notion of an index pair).

With the use of rigorous numerical methods (interval arithmetic, etc.), it is possible to construct index pairs built of  $n$ -dimensional hypercubes, and then apply the homology functor to obtain easy to manipulate algebraic information.

The desire to be able to compute the homological Conley index effectively is my main motivation for diving into computational aspects of cubical homology theory.

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**Funding or special equipment needed to carry out a PhD project <sup>iii</sup>:**

1. Is funding available for experimental work: NO
2. Is the equipment needed to complete a PhD project available in your lab/department: Not applicable

**Most recent publications in WoS/SCOPUS journal – no more than 5 published after 1.01.2017**

No	Authors/title/journal	Journal IF/Quartile – for WoS and SNIP/ CiteScore for SCOPUS	Publication year
1.	(Please fill in here)	(Please fill in here)	(fill in)
2.	(Please fill in here)	(Please fill in here)	(fill in)
3.	(Please fill in here)	(Please fill in here)	(fill in)
4.	(Please fill in here)	(Please fill in here)	(fill in)
5.	(Please fill in here)	(Please fill in here)	(fill in)

**Most recent externally funded projects you were involved in – no more than 3**

No	Project title, the name of the Princ. Investigator (PI) and the institution the project was carried out	Year awarded	Role in the project
1.	Computational Cohomology and Applications, PI: Paweł Pilarczyk, University of Minho, Braga, Portugal	2009	
2.	Algebraic Topology and Applications, University of Minho, Braga, Portugal	2009	

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3.	PHIDM: Persistent Homology – Images, Data and Maps, Marie Curie Postdoctoral Fellowship, Institute of Science and Technology Austria	2013	
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**Additional relevant information – (no more than 1600 characters)<sup>iv</sup>**  
(Please fill in here)

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i You may select up to two disciplines out of 12 disciplines represented in the Doctoral School

ii Observe the limit of not more than 300 words

iii Leave only one answer

iv Add any other relevant information eg. awards for PHD students whom you supervised (no more than 200 words)