



## **Programa: Departamento de Informática**

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### **Impostor Phenomenon in Software Engineers**

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The Impostor Phenomenon (IP) [1] is widely discussed in Science, Technology, Engineering, and Mathematics (STEM) and has been recently evaluated in Computer and Data Science students [2, 3, 4]. There has been no formal research conducted on IP in software engineers in general, even though its consequences may contribute to mental health disorders, such as depression and burnout [5].

This paper [6] describes a survey that investigates the extent of impostor feelings in software engineers, considering aspects such as gender, race/ethnicity, and roles. Furthermore, we investigate the influence of IP on their perceived productivity. The survey instrument was designed using a theory-driven approach [7] and included demographic questions, an internationally validated IP scale (CIPS) [8], and questions for measuring perceived productivity based on the SPACE framework [9,10] constructs. The survey was sent to companies operating in various business sectors. Data analysis used bootstrapping with resampling to calculate confidence intervals and Mann-Whitney statistical significance testing for assessing the hypotheses.

We received responses from 624 software engineers distributed across 26 countries. The bootstrapping results reveal that a proportion of 52.7% of software engineers experience frequent to intense levels of IP and that women suffer at a significantly higher proportion (60.6%) than men (48.8%). Regarding race/ethnicity, we observed more frequent impostor feelings in Asian (67.9%) and Black (65.1%) than in White (50.0%) software engineers. We also observed that the presence of IP is less common among individuals who are married and have children. Moreover, the prevalence of IP showed a statistically significant negative effect on the perceived productivity for all SPACE framework constructs.

Based on our results, the evidence relating IP to software engineers provides a starting point to help organizations find ways to raise awareness of the problem and improve the emotional skills of software professionals. We put forward that software engineering organizations should consider implementing strategies and support mechanisms to promote psychological safety, especially considering underrepresented groups, and help professionals cope with IP feelings and overcome them, ultimately fostering a more inclusive and productive workforce.



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