



**Association for
Computing Machinery**

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**CHAMPION OF COMPUTER SCIENCE IN AFRICA TO RECEIVE
INAUGURAL LUIZ ANDRÉ BARROSO AWARD**

***Rachid Guerraoui Selected for Theoretical and Applied Contributions to
Distributed Computing and Promoting Computer Science in Africa***

New York, NY, April 2, 2025 – ACM, the Association for Computing Machinery, today named Rachid Guerraoui the recipient of the inaugural ACM Luiz André Barroso Award for theoretical and applied contributions to distributed computing and impactful work on promoting computer science in Africa. Guerraoui is a Professor in the School of Computer and Communications Sciences at EPFL, where he is also Director of the Distributed Computing Laboratory.

The [ACM Luiz André Barroso Award](#) was established to recognize researchers from historically underrepresented communities who have made fundamental contributions to computer science. The award is named after Luiz André Barroso, a Brazilian computer engineer who pioneered the design of the modern data center. Barroso, who grew up in a diverse community, was a strong supporter of equal opportunity for everyone.

Technical Contributions

Rachid Guerraoui has made groundbreaking contributions that have shaped the landscape of distributed computing. Distributed computing is the process of making multiple computers in different locations work together to solve a common problem. A common thread that runs through Guerraoui’s work is providing principled theoretical and practical foundations for distributed computing mechanisms such as transactional memory, agreement protocols, and asynchronous information dissemination algorithms.

His work on e-Transaction and opacity concepts has provided new insights into managing transactions in concurrent environments. By establishing a theory of Transaction Contention Management and developing STMBench7, he has provided tools and frameworks for understanding and optimizing transaction performance.

Guerraoui proposed effective solutions to distributed agreement problems, which he applied to the realm of cryptocurrency. He demonstrated how to build scalable asynchronous abstractions that can support secure and decentralized digital currencies. Furthermore, his work on asynchronous

dissemination protocols has paved the way for fully decentralized publish-subscribe systems, enabling efficient and reliable communication in distributed environments. In recent years, Guerraoui has ventured into the exciting field of Byzantine Machine Learning, which seeks to implement large-scale machine learning algorithms in the presence of machine failures. This work has opened new avenues for research at the intersection of machine learning and distributed computing.

Computing in Africa

Beyond his technical contributions, Guerraoui has also been a passionate advocate for computing education in Africa. Born in Morocco, he has been committed to fostering academic excellence on the African continent. By co-initiating the EPFL's [Excellence in Africa program](#), for example, Guerraoui has promoted the development of junior faculty and graduate students, providing them with opportunities to excel in their research and careers. The program has benefited researchers from Rwanda, Ivory Coast, Ghana, Cameroon, South Africa, Tanzania, Tunisia, and Morocco. His involvement in the creation of the [UM6P College of Computing](#) in Morocco has further expanded access to high-quality computer science education in the region.

Additionally, Guerraoui has played a key role in fostering collaboration and exchange among African computer science researchers through the [Netys conference](#), which he also co-initiated and is held in Morocco. Netys is an exchange forum for African computing researchers who cannot easily travel to the US and Europe because of visas and financial issues.

“The ACM Awards Committee has made an excellent choice by selecting Rachid Guerraoui as the inaugural recipient of this new award,” said ACM President Yannis Ioannidis. “In the spirit of Luiz Barroso, Guerraoui’s technical achievements are wide-ranging and highly influential. As evidenced by his numerous Best Paper Awards from several conferences, he is one of the leading figures in distributed computing. And like Barroso, he has been effective in finding ways to broaden participation in the field. Africa has made rapid advances in computing, but increasing the size of a skilled workforce is essential to further growth. Through several initiatives, Guerraoui is making computer science education accessible across the continent.”

“As an international leader in distributed computing, Rachid Guerraoui continues Luiz’s legacy of transformative technical impact,” said Jeff Dean, Google’s Chief Scientist. “During his many years at Google, Luiz pioneered the design of the modern data center. He was also a dedicated mentor to the next generation of computer scientists, and I know he would wholeheartedly endorse Guerraoui’s work in helping educate computing professionals across Africa. Geurraoui is the ideal person to receive this award.”

Biographical Background

Rachid Guerraoui is a Professor in the School of Computer and Communications Sciences at EPFL (the Swiss Federal Institute of Technology in Lausanne), where he is Director of the Distributed Computing Laboratory. He is also head of the Advisory Board of the UM6P (University Mohammed 6

Polytechnic) College of Computing in Morocco. Guerraoui received an MSc in Computer Science from Sorbonne University, and a PhD in Computer Science from Orsay University.

Guerraoui's many honors include the Dahl-Nygaard Award (2024), a 10-Year Most Influential Paper Award, and best paper awards from several conferences. Guerraoui was named an ACM Fellow in 2012 for contributions to the theory and practice of reliable distributed computing and Professor of College de France in 2018.

Guerraoui will be formally presented with the ACM Luiz André Barroso Award at the annual ACM Awards Banquet, which will be held this year on Saturday, June 14 at the Palace Hotel in San Francisco.

About the ACM Luiz André Barroso Award

The [ACM Luiz André Barroso Award](#) celebrates researchers from communities historically underrepresented in computing from across the world who have made fundamental contributions to computer science. Each year ACM honors a preeminent computer scientist with the Luiz André Barroso Award. The award recipient gives a one-hour invited talk at a major ACM conference of their choice. A video of the talk is made available on the ACM website. The award carries a cash prize of \$40,000 plus an additional \$10,000 cash contribution to an approved charity of the awardee's choice. Financial support for the Luiz André Barroso Award is provided by Google.

About ACM

[ACM, the Association for Computing Machinery](#), is the world's largest educational and scientific computing society, uniting computing educators, researchers, and professionals to inspire dialogue, share resources, and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

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