Yuval Cohen - Extended Biography

Professor Yuval Cohen (PhD) is an Associate Professor of Industrial Engineering at Afeka – Tel-Aviv Academic College of Engineering, where he is a senior faculty member in the Industrial Engineering department.
He is also an associate editor of the Journal of Intelligent Manufacturing and Vice Chair of Publications for IFAC TC-5.1.
He previously founded and headed the Industrial Engineering program at the Open University of Israel, which he led from 2002 to 2013.
His academic work lies at the intersection of intelligent and advanced manufacturing, Industry 4.0, operations management, logistics and operations research.
Within this broad field, he has developed particular expertise in intelligent manufacturing systems, digitalized assembly lines and human–cobot collaboration on the shop floor.
Professor Cohen plays a prominent leadership role in IFAC, the International Federation of Automatic Control.
Since 2019 he has served as Vice-Chair of IFAC Technical Committee 5.1 on Plant Control and Industrial Logistics, helping to shape the federation's research agenda in smart manufacturing and logistics.
In 2022 he chaired and edited the 14th IFAC Workshop on Intelligent Manufacturing Systems (IMS 2022), a flagship IFAC event focused on intelligent manufacturing.
In 2025 he joined the advisory board and acted as proceedings editor for the 15th IFAC IMS Workshop in Koszalin, further cementing his long-term engagement with the IMS series.
He has also served as session chair, organizer and program committee member in major IFAC events such as INCOM, MIM and the IFAC World Congress, often leading tracks on Assembly 4.0 and smart digitized shopfloors.
Through these activities, he has helped position IFAC as a central forum for exchanging ideas on intelligent manufacturing, digital twins and human–robot collaboration.

Professor Cohen's research in intelligent manufacturing focuses on the design, planning and control of next-generation assembly and production systems.
He has published more than seventy papers, many of them on assembly-line design, reconfigurable production systems and advanced operations planning for smart factories.
His work links combinatorial optimization and operations research with automation and industrial informatics, bridging theory and practice in Industry 4.0 environments.
A recurring theme in his publications is the integration of artificial intelligence and data-driven methods into shop-floor decision making and monitoring.
In recent years, a significant part of his research has been devoted to collaborative robots (cobots) and human–cobot interaction in manufacturing.
He is principal investigator of a dedicated research grant on human–cobot interaction,

carried out with Professor Shraga Shoval and supported jointly by Afeka and Ariel University.
Together with his co-authors, he has examined vocal communication between cobots and human operators as a means to enhance productivity and safety in shared workspaces.
He has also co-authored a review on the fusion of computer vision and AI in collaborative robotics, outlining future directions for perception-rich cobot systems.
These studies contribute to understanding how to design cobot workstations that feel safe, intuitive and comfortable for human workers.
A current PhD student under his supervision investigates how users experience comfort and safety during interaction with cobots, connecting empirical work with his theoretical frameworks.

Beyond cobots, Professor Cohen investigates broader questions of intelligent automation, such as workstation–operator interaction in the 4.0 era and smart contracts for digital traceability in complex assembly.
He has played a leading role in defining and disseminating the notion of “Assembly 4.0”, organizing multiple IFAC sessions dedicated to advanced assembly systems and their digitalization.
His editorial work includes serving as Associate Editor of the Journal of Intelligent Manufacturing, a leading journal in intelligent manufacturing, since 2019.
He has guest-edited several special issues on intelligent manufacturing, intelligent cobot systems, smart production and AI-based services, including an IFAC PapersOnline issue devoted to IMS 2022.
He is also a member of editorial and advisory boards for several international journals in operations research, productivity management and ICT, reflecting the multidisciplinary scope of his work.

Prior to his academic career, Cohen worked for several years as Senior Operations Planner at FedEx Ground in the United States, where he was responsible for the rolling five-year plan for 24 hubs and about 400 terminals.
In this role he planned capacity expansions, relocations and new facilities for a multi-billion-dollar investment program and received several awards for his contributions.
Returning to Israel in 2001, he established and headed the Industrial Engineering program at the Open University before joining Afeka College of Engineering in 2014.
At Afeka he leads the Operations Management discipline, teaches courses on Industry 4.0 and advanced manufacturing, and regularly introduces students to intelligent automation and cobot technologies.
He has authored and co-authored several scientific books, including the award-winning

Introduction to Industrial Engineering, and numerous journal articles in industrial engineering and operations research.

Professor Cohen holds a BSc in Industrial Engineering from Ben-Gurion University, an MSc in Industrial Engineering from the Technion and a PhD in Industrial Engineering from the University of Pittsburgh.
He is a Fellow of the Institute of Industrial Engineers (IIE) and a full member of INFORMS, underscoring his standing in the international operations research community.
Over the years he has received multiple awards for research and teaching excellence at Afeka and the Open University, as well as professional prizes for his textbooks and contributions to industry.
At the intersection of IFAC leadership, intelligent manufacturing research and hands-on experience with global logistics, Professor Cohen is a key voice in shaping the future of smart factories and human-centered automation.
His current work continues to push forward the integration of cobots, AI and digital twins into resilient, sustainable and human-friendly manufacturing systems.