IOANNIS KANELLAKOPOULOS, PHD

SHORT BIOGRAPHY

Overview

Dr. Kanellakopoulos is a technology leader with 25+ years of experience in R&D (Research & Development), operations, administration, and management in both academia and industry. He is the author or co-author of one book, 6 book chapters, 24 articles in peer-reviewed technical journals, 60 papers in refereed technical conferences, and 12 contributions to international telecommunications standards committees. He has been the plenary speaker at major technical conferences, and an invited speaker at more than 40 industrial and academic venues in 12 countries across 4 continents.

His training in systems and control, his academic career at UCLA, and his industrial career with multiple Silicon Valley startups exposed him to a wide range of technology areas and allowed him to make significant contributions to many of those areas.

Industrial Career

In his industrial career, he designed and built telecom products such as carrier-grade DSL and Carrier Ethernet hardware and software, and has significant experience with international telecommunication standards (ITU-T SG15/Q4, 2006-2012).

His work in telecommunications focused mainly on system architecture and physical layer design for next-generation Ethernet Access Devices over copper and fiber, and on new algorithms for receiver based crosstalk cancellation.

He has also dabbled in wireless communications, primarily on digital signal processing methods for new modulation schemes for baseband transceivers, and has made contributions to semiconductor manufacturing, where he developed patented core technology methods for yield improvement and enhanced metrology.

Academic Career

During his academic career, Dr. Kanellakopoulos conducted extensive applied research in adaptive control of nonlinear systems, with applications to automotive control systems, specifically driver assistance systems (adaptive cruise control, blind spot monitoring, lane keeping, vehicle collision avoidance) and active suspension systems.

As part of his research on vehicle automation, he directed a project on automation of heavy-duty vehicles as part of the California PATH Program; one of the most visible results of this research was the "Variable Time-Headway" algorithm for vehicle following (adaptive cruise control), which has found widespread use in current adaptive cruise control systems.

His research team at UCLA participated in the design and implementation of a fully-automated heavy-duty (Class 8) 18-wheeler truck, which was used for numerous experiments and demonstrations to project sponsors.

His team also designed and built a prototype full-size fully-automated electric vehicle that has been used for research purposes on multiple college campuses, and which was showcased during Dr. Kanellakopoulos' plenary talk at the 1999 American Control Conference in San Diego, CA.

Dr. Kanellakopoulos has directed collaborative projects with several automotive/truck manufacturers and vendors (Ford, Mercedes-Benz, DaimlerChrysler, Freightliner, Gentex, Visteon), and was the co-founder and CEO of Iperasys, a startup dedicated to the development of next-generation low-cost-high-accuracy imaging sensors for driver assistance systems and vehicle automation applications.

His research accomplishments earned him the grade of Fellow of the Institute of Electrical and Electronics Engineers (IEEE, elected in 2005), and a host of international awards, including the 1993 George S. Axelby Outstanding Paper Award of the IEEE Control Systems Society and the 1998 Donald P. Eckman Award of the American Automatic Control Council.

Expert Witness Career

He has served as an Expert Witness since 2000, and has worked on multiple cases involving patent infringement in both the telecommunications and automotive areas, as well as personal injury cases involving automated equipment.

His deep technical expertise in the areas of telecommunications and automotive driver assistance systems has allowed him to analyze patents and products in detail, and explain clearly (in expert reports, depositions, and court testimony) the main issues that the judge and jury need to comprehend in order to understand the essence of the case. His extensive experience with teaching university students for 10 years and dealing with customers in the marketplace for another 12 years allows him to create documents and presentations that help judges and jurors understand the topic they are dealing with, instead of confusing them with unnecessary technical details.

After all, it takes excellent teaching skills and a deep understanding of a complex technical concept to convey the essence of that concept to non-experts without talking down to them.