

Computer Science & Electrical Engineering Seminar Series

Digital Image Processing – Past and Future

Kenneth R. Castleman, PhD

Friday, Sep 12th, 2008 in FH 557 at 2:00 pm*

Digital images – pictures processed by, or even generated by a computer – are nowadays so commonplace as to be the ordinary. But in the late 1950s, when computers were still new, untried, and untrusted, a few visionary researchers dared to consider the possibilities of computer image processing. In the 1960s only a few government labs could muster the massive amounts of computer power required to process pictorial data. Even so, insightful investigators worked out most of the processing and analysis techniques that have become commonplace today. Many of these were generalizations of existing One-dimensional techniques. The unmanned space program was a significant early application of this rapidly evolving technology. In the 1970s the major universities got into the act, and refined the basic techniques with academic aplomb. The 1980s saw commercialization of the technology as it migrated from mainframes to minicomputers and saw applications in medicine and other fields. In the 1990s personal computers began to process images, and the technology made its way into the home. After the turn of the millennium, theatrical motion pictures can be produced entirely in pixels, and every TV station has its own digitally generated spinning logo. Supermarket kiosks offer sophisticated processing to improve family snapshots. With the continuing advances in computing technology, we can expect the present push toward pixels to persist.

Kenneth R. Castleman, Ph.D.



Ken Castleman graduated from High School in Bogata, Texas in 1960 and received a PhD degree in Biomedical Engineering from The University of Texas at Austin in 1970. He is the author of two college textbooks and more than 60 scientific articles. One of his textbooks has now been translated into both Japanese and Chinese. He has also been a Research Fellow at USC and UCLA and has taught courses at Caltech.

Ken worked for the National Aeronautics and Space Administration (NASA) at the Jet Propulsion Lab (JPL) from 1970 until 1985 and was inducted into the Space Technology Hall of Fame in 1994. He was a co-founder of his company in 1985 and served as its president until he retired in 2007. That company conducted government-sponsored medical research.

Ken is also an Adjunct Professor of Biomedical Engineering at UT Austin, and he serves on the industrial advisory committee for the UT College of Engineering. He also worked on image analysis for both of the Space Shuttle disasters and for the investigation into the John F. Kennedy assassination. He consults for the National Institutes of Health and the FBI. He also serves as an expert witness in patent cases involving digital imaging and related technologies.

**Dr. Castleman will also give a guest lecture in the course “Image Processing” on Thursday, Sep 11th, in FH560L from 5:30-8:15 pm. Please contact Dr. Yu-Ping Wang (wangyup@umkc.edu) for further information about the guest lecture.*