Profile

Kelly Cohen

Professional Roles at UC

Brian H. Rowe Endowed Chair in Aerospace Engineering
Professor, Biomedical Engineering
College of Engineering and Applied Science
Director of *Ai Bio Lab*, *UC Digital Futures*
President, North American Fuzzy Information Processing Society
https://ucdigitalfutures.com/ai-bio-lab/
https://www.researchgate.net/profile/Kelly_Cohen

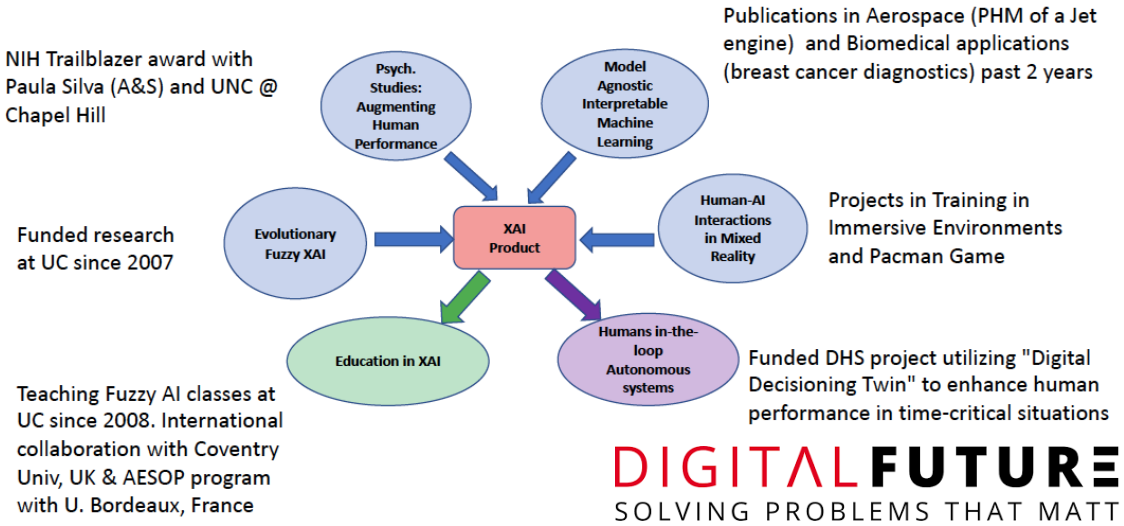
Educational & Professional Background

1999 Ph.D. Aerospace Engineering, Technion, Haifa, Israel
1991. M.S. Aerospace Engineering, Technion, Haifa, Israel
1986 B.S. Aeronautical Engineering, Technion, Haifa, Israel

Research Interests

- **Responsible AI:** Development and application of artificial intelligence technologies in a manner that is ethical, transparent, and accountable. Responsible AI includes aspects like explainable AI (XAI), which aims to make AI decisions understandable to humans, and assured autonomy, ensuring that autonomous systems operate safely and reliably under all conditions.
- **AI-enabled Prognostics and Health Management (PHM):** Focuses on the application of AI techniques to predict the future state of systems (prognostics) and manage their health through maintenance and monitoring.
- **Intelligent Systems:** Encompasses the development of systems capable of autonomous decision-making and learning. This includes unmanned aerial vehicles (UAVs) and advanced air mobility solutions.
- **Fuzzy Logic Control and Genetic Fuzzy Systems:** Genetic fuzzy systems, which combine fuzzy logic with evolutionary algorithms, highlight our innovative approach to developing intelligent systems that can adapt and optimize
- **Computational Intelligence and System Identification:** This area focuses on the application of computational models to understand and predict system behaviors, which is essential for the design and control of complex engineering systems.

XAI Enabled Research Eco-System - Synergies



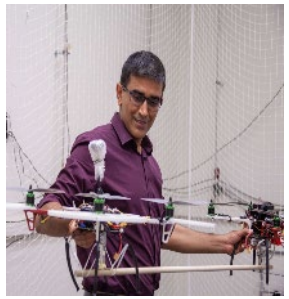
DIGITAL FUTURES
SOLVING PROBLEMS THAT MATTER

Federal, State, and Industry Research Partners

Cooperative Distributed Systems Lab and UAV MASTER Lab

University of CINCINNATI | MECHANICAL AND MATERIALS ENGINEERING

Manish Kumar



Professional Roles at UC

Professor and Graduate Program Director
Department of Mechanical and Materials Engg.
Director, CDS Lab (www.ceas.uc.edu/cds)
Co-director, Industry 4.0/5.0 Institute (www.ceas.uc.edu/industry)
Co-director, UAV MASTER Lab (www.ceas.uc.edu/uav

Research Interests

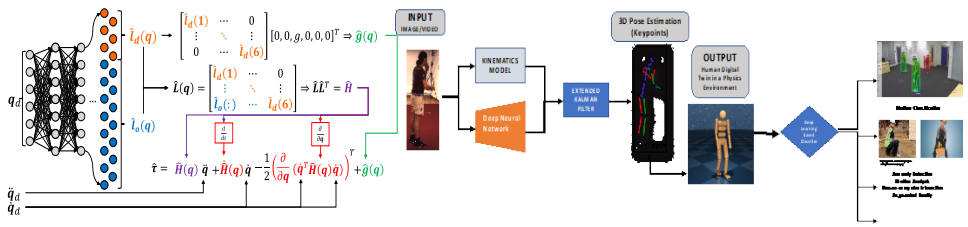
- Artificial Intelligence and Machine Learning for robotics and Industry 4.0 applications
- Unmanned Aerial Vehicles (UAV) and Robotics, Indoor UAV applications
- Navigation and path planning of ground and aerial vehicles
- Computer vision and multi-sensor fusion for situational awareness and tracking
- Large scale optimization for tasking and resource allocation

Educational & Professional Background

PhD, 2004
Mechanical Engineering, Duke University.
MS, 2002
Mechanical Engineering, Duke University.
Bachelor of Technology, 1998
Mechanical Engineering, Indian Institute of Technology, Kkaragpur.

Active Research Projects

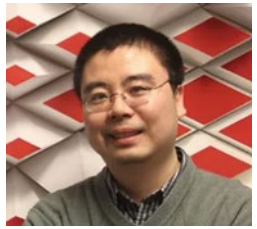
Telehealth drone – indoor drone that delivers healthcare (NSF)
Physics Inspired **Deep Neural Networks** (AFRL)
Human digital twin (Industry 4.0/5.0 Institute)
UAV route planning for national airspace and defense applications (AFRL/NASA)
PDE spatio-temporal epidemic spread modeling and control (NSF)



National Science Foundation WHERE DISCOVERIES BEGIN

Profile

Ming Tang



Professional Roles at UC

Professor of Architecture & Interior Design, DAAP
Director of *Extended Reality Lab, UC Digital Futures*
Leadership committee of *Institute for Research in Sensing*
Co-founder of *DAAP Architectural Robotics Lab.*
Licensed Architect, NCARB, LEED AP

Educational & Professional Background

2008 Master of Fine Art, Interactive Design & Game Development, Savannah College of Art and Design
2003 Master of Art, Digital Media Art and Technology, Michigan State University
2000 Master of Architecture, School of Architecture, Tsinghua University, China

Research Interests
➢ Enhance communication and collaboration through Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR).
➢ Leverage digital twin technology, large-scale reality capture, and Metaverse for innovative game-based learning.
➢ Utilize human-computer interaction in simulated environments for sectors like education, healthcare, safety, and professional workforce training.
➢ Employ Digital Human. AI, and LLM, with metrics to assess human performance in XR environments.
➢ Integrate computational design, digital fabrication, and generative design in Architecture, Engineering, and Construction (AEC)

Over $2M in federal, state, and industry funding, authorship of three books, publication of 67 peer-reviewed papers, and receipt of 41 design awards

Federal, State, and Industry Research Partners

>> Click the image to open the XR-lab website.

Center for Global Design and Manufacturing

UC Digital Futures
Smart Manufacturing Lab

Profile

University of Cincinnati

Sam Anand

Professional Roles at UC

Professor of Mechanical Engineering
Director of *Siemens PLM Simulation Technology Center*
Director of *Center for Global Design and Manufacturing*
***Co-Director**, Industry 4.0/5.0 Institute*
***Lab Leader**, Smart Manufacturing Lab, UC Digital Futures*

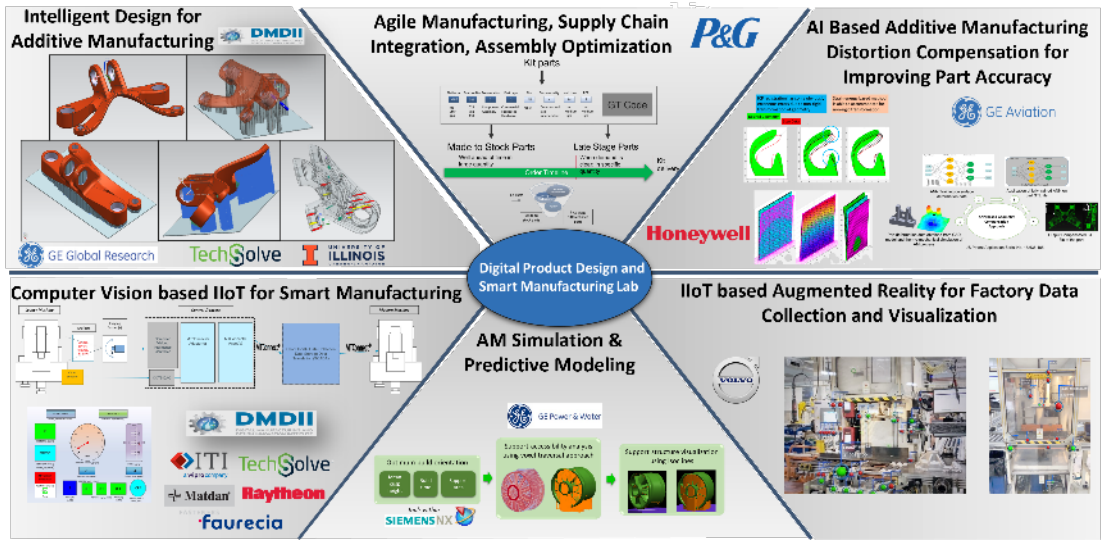
Educational & Professional Background

PhD, 1990
Industrial Engineering, The Pennsylvania State University.
MS, 1987
Industrial Engineering, The Pennsylvania State University.
Master of Engineering, 1984
Mechanical Engineering, Indian Institute of Science.

Over $25M federal, state and industry funding in Intelligent Design and Advanced Manufacturing areas

Research Interests

- Intelligent Product Design; Modeling and Optimization of Additive and Subtractive Manufacturing Processes
- Industrial Internet of Things (IIOT), Augmented Reality/Virtual Reality and Data Analytics for Smart Factory; Industrial Automation
- Agile Manufacturing, Factory Flow, Factory Physics & Manufacturing System Optimization
- Computer Vision, Machine Learning and Digital Twin application for Design and Manufacturing (all aspects of Industry 4.0)
- Conversational Design and Manufacturing Process Assistant Based on Large Language Models such as GPT4



Ongoing and Recent Federal and Industry Research Contract Partners

M D The Digital Manufacturing Institute · SIEMENS · BOEING · P&G · ITI a wipro company · EATON · GE Power & Water · Raytheon Technologies · TechSolve · GE Global Research · GE Aviation

Federal and Industry Research Contract Partners

NSF · P&G · Ford · GM · faurecia · Lexmark · Ohio Federal Research Network (OFRN) · DMDII · Honeywell · Kroger · UDRI University of Dayton Research Institute