Professor Jenn-Jier James Lien (2025/08/01)

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Education: (1985~1998)

1993/08~1998/04 Ph.D. Electrical Engineering, University of Pittsburgh.
Research Assistant: Research conducted at the Robotics Institute (RI), School of Computer Science (SCS), Carnegie Mellon University (CMU).
Principal Advisor: Professor Takeo Kanade, RI, SCS, CMU.
- Member of the National Academy of Engineering
- Fellow of the American Academy of Arts and Sciences

Co-Advisor: Professor Ching-Chung Li, EE, U. of Pittsburgh.
Co-Advisor: Professor Jeffrey F. Cohn, Dept. of Psychology and Psychiatry, U. of Pittsburgh.
Dissertation Title: "Automatic Recognition of Facial Expressions Using Hidden Markov Models and Estimation of Expression Intensity"

1991/08~1993/05 M.S. Electrical Engineering, Washington U., St. Louis, MO.
(1989/09~1991/06 Compulsory service in Taiwan military)
1985/09~1989/05 B.S. Biomedical Engineering, Chung Yuan Christian University, Taiwan.

Current Employment at NCKU: (2002~Current)

2002/08~Current - Assistant (2002/08)/Associate (2008/08)/Professor (2012/08), Dept. of CSIE, NCKU, Tainan, Taiwan
- Director of Robotics Lab. at NCKU, supervising around 30 graduate students

2024/08~Current - Vice Dean, College of Electrical Engineering and Computer Science.
2023/01~Current – Chair of Smart Sports Center, School-Level.
2022/07~Current - Leader of the CrowdEyes team to build a smart sports stadium at NCKU.
- The team includes 16 interdisciplinary teachers and more than 30 graduate students

2019/12~2021/07 - Established AI robotics program and center at Miin Wu School of Computing, chair 2020/08~2021/07
2017/01~2018/12 -Deputy secretary general, Chinese Institute of Automation Engineers, TW
2015/08~2018/07 -Vice chairman of Department of Computer Science and Information Eng. & director of Institute of Manufacturing Information and Systems (IMIS)

Former Employment in Industry: (1999~2002)

1999/01~2002/07 Visionics corporation, Jersey City, NJ, USA (startup company, IPO VSNX at Nasdaq in 2002)
- It is an award-winning face recognition company.

Position: Senior research scientist/DARPA project leader.
Award: 2000, 2002 DARPA FERET face recognition competition: No.1.
Grant: 2000 received US$ 5 million research grant from DARPA's surveillance project BAA00-29: Human Identification at a Distance (HID).

1998/05~1998/12 Carnegie Mellon University (CMU), School of Computer Science (SCS), the Robotics Institute (RI), Vision Autonomous Systems Center (VASC).
Position: Visiting research scientist
Project: Automated face analysis (at face group).

1993/01~1993/07 Surface Systems, Inc. St. Louis, Missouri
Position: R&D engineer.
Project: Hardware/circuit design and software simulation for weather forecast and software design for water pollution analysis.

Startup Company Experience: (1999~2013)

2009~2013 1) Co-Founder & CTO of Visionatics, an embedded surveillance company
- Research Fields: Develop embedded computer vision algorithms for the markets of surveillance, HCI (human-computer interactions), and ADAS (Advanced Driver Assistance System)
- Cooperation Company: Texas Instruments (IC design, USA), Faraday Technology Corp. (ASIC design), and Advantech (Embedded Computing & Automation)

2004~2008 2) Co-Founder & CTO of BroBri Vision, a smart manufacturing company
- Research Fields: Develop machine learning for computer vision algorithms for AOI (Automatic Optical Inspection) machines
- Cooperation Company: AUO (TFT-LCD), InnoLux (TFT-LCD), MoTech Industries, Inc. (Solar Cell), and E-Ton Solar Tech (Solar Cell).

1999~2002 3) Senior research scientist & DARPA project leader at Visionics corporation, Jersey City, NJ, USA (startup company, IPO VSNX at Nasdaq in 2002), an award-winning face recognition company

Research Field and Cooperation Company: (2014~Current)

- Technology: Deep learning for computer vision: object detection, tracking, recognition and 3D reconstruction with augmented reality (AR).

- Application: Develop three AI edge cloud computing platforms -

2021~Current: 1) Develop a cloud computing platform for smart sports
- Free viewpoints from crowdsourced multi-camera live streaming to enhance fan engagement for a 5G smart sports stadium
- Be able to request free viewpoint spots from any spectators
- Develop sports analytics technology such as 3D trajectory analyses of players and balls, and detection and tracking of the 3D player skeleton
- Cooperation Company: Top Volleyball League (TVL), and Taiwan national volleyball team

2019~Current: 2) Develop a federated learning (FL) platform for smart healthcare

- Run at either Intel CPU with OpenFL and OpenVINO or NVidia GPU
- Working with a Thoracic Surgeon team to build a federated learning platform for 3D LDCT subsolid nodule detection and classification, which spans 3 hospitals
- 2D/3D skeleton-based biofeedback pulmonary rehabilitation
- Cooperation Company: Intel, NCKU hospital, Ditmanson medical foundation Cha-Yi christian hospital, and Tainan municipal hospital.

2014~Current: 3) Develop an AIoT platform for smart manufacturing
(AIoT: Artificial Intelligence of Things)
- 2D/3D automatic optical inspection (AOI)
- Tool wear monitoring and life prediction
- Visual-guided robot navigation and robot arm grasping and placing controls
- Cooperation Companies: TongTai Machine & Tool Co., Ltd., and Contrel Technology

Award:

2004~ - **5 best paper awards** – TAAI 2021 in Taiwan, CVGIP 2007 in Taiwan, PSIVT 2007 in Chile, IMECS 2007 in Hong Kong 2007, and CVGIP 2004 in Taiwan
- **2 best poster awards** – TAAI 2020 in Taiwan, and MOST-JSP Conf. 2018 in TW
- **1 best paper candidate** – ACCV 2007 in Japan

2022 Received around US$1 million 4-year grant from NSTC （National Science and Technology Council, NSTC 112-2425-H-006-001 -）Taiwan for the development of sports technology
-Project: Enhancing Fan Engagement and Immersive Multimedia via Crowdsourced Live Streaming for a 5G Smart Sports Stadium

2008 Excellent teaching award at NCKU, the year 2008

2006 Microsoft Research Asia fellowship award: One of my Ph.D. students won this award and did a one-year internship at Microsoft Research Lab, Asia.

2000 2000, 2002 FERET face recognition competitions: No. 1. worked at Visionics.

2000 Received US$ 5 million research grant from DARPA's surveillance project BAA00-29: Human Identification at a Distance (HID).

Invited Talk in Industry:

2023 Chang Gung Memorial Foundation and Hospital - Southern District Academic Symposium of Computer-Assisted Orthopaedic Surgery, Taiwan:
- Talk Title - Improve the Function of the Operating Room by Using Multi-Camera Video Stitching Technology

2022 Chang Gung Memorial Foundation and Hospital - Chang Gung Sports Medicine Symposium:
- Talk Title - Human Skeleton Detection Technology Application in Precision Sports and Sports Medicine through Federated Learning

2022 Intel Edge to Cloud Conference:

- Talk Title – Lung Nodule Detection via Federated Learning and Pulmonary Rehabilitation.

2017 MSRA (Microsoft Research Lab – Asia) Academic Day:
- Talk Title - Quick & Accurate Robot Arm Control by Using Vision with Deep Learning

2012 TI (Texas Instruments) Technology Day:
- Talk Title - Intelligent NVR at Powerful DM8168: ARM for Embedded CMS with Intelligent Search and DSP for Programmable IVA

2010 TI (Texas Instruments) Asia Technology Day:
- Talk Title - Embedded IVA at TI Platforms: Omni-Camera Calibration & ePTZ at DM365 and Detection, Tracking, and Recognition at DSP DM6437

Available upon request for more references