陳楷儒 KAIJU CHEN

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Kaiju Chen is a self-motivated engineer and team player with 10+ years of experience developing a fully-automated clothing digitizing system in the virtual try-on services. The reconstruction algorithm digitizes one piece of clothing in 20 minutes. The algorithm consists of computer vision, 3D reconstruction, and deep learning technology. Proven success in improving the online shopping experience, reducing returns by 50%, and increasing 30% conversions for more than 40 brands.

EXPERIENCE

Style.me — **Taipei City, Taiwan**
Team Lead, 3D Scan & Reconstruction — *July 2013 - Present*

- Lead a team of six members to develop algorithms related to 3D scanning and reconstruction and deliver features on time.
- Design architecture, research and implement the 3D scanning and reconstruction system for the fully-automated clothing digitalization. The automated process speeds up the post-production eight times faster. The details are as follows:
  - Build the scanning studio, develop scanning programs, and define scanning SOP.
  - Develop a fully-automated camera calibration algorithm to calibrate intrinsic and extrinsic parameters of external RGB camera and depth camera. It saves the traditional operation time for 30 minutes.
  - Develop the algorithm to reconstruct all types of clothes using a depth camera.
  - Using computer vision and deep learning to generate the high resolution (4K) texture of the 3D model.
  - Develop deep learning models for alpha matte prediction on translucent materials such as lace or chiffon.
  - Develop geometry processing algorithms (Laplacian smoothing, collision detection, collision handling, etc...) for 3D object segmentation, 3D object deformation, and UV unwrapping.
  - Develop image inpainting algorithm using deep learning models (GAN) to perform texture fixing.
  - Define the quality of clothing reconstruction. Develop the automated quality check algorithm to score clothing reconstruction results.
- Face reconstruction: customize a 3D avatar with a front face image using 3DMM and SynergyNet.
- Implement tools for 3D model conversion to AR application.

CyberLink — **New Taipei City, Taiwan**
Engineer — *Sep 2008 - June 2011*

- Function implementation of application layers in PowerDVD8, PowerDVD 9, and PowerDVD 10.
- Implement functions of UI interface including a file browser, file playback, DVD, and BD playback, UPnP playback using low-level win32 APIs.
- Analyze and improve the performance of PowerDVD launch time.

SKILLS

- Programming Languages: C/C++, Python, Matlab
- Frameworks: Tensorflow, PyTorch, OpenCV, MFC, Win32
- Others: AWS, Docker, Git, Jenkins, CMake, SVN
- Languages: Chinese, English (TOEIC total score: 920, listening:480, reading:440)

EDUCATION

National Chiao Tung University — **Hsinchu, Taiwan**
Ph.D. candidates in Computer Science — *Sep 2011 - June 2013*
Research interests: neural networks, pattern recognition, optimization theory, artificial intelligence

National Chiao Tung University — **Hsinchu, Taiwan**
M.S. in Multimedia Engineering — *Sep 2005 - June 2007*
Thesis: Simulated annealing for pattern recognition and seismic application

National Chiao Tung University, Taiwan — **Hsinchu, Taiwan**
B.S. in Computer Science — *Sep 2001 - June 2005*

PUBLICATIONS

1. Kou-Yuan Huang, Kai-Ju Chen, Jiun-Der You, and An-Ching Tung, “Hough transform neural network for pattern detection and seismic applications,” a special issue of Neurocomputing, Vol. 71, Oct. 2008, pp.3264-3274.
2. Kou-Yuan Huang and Kai-Ju Chen, “Simulated annealing for pattern detection and seismic applications,” Journal of Information Science and Engineering, Vol. 25, No. 3, May 2009, pp.793-805.
3. Kou-Yuan Huang and Kai-Ju Chen, “Multilayer Perceptron for Prediction of 2006 World Cup Football Game,” Advances in Artificial Neural Systems, Hindawi Publishing Co., Volume 2011, Article ID 374816