Lele Chen

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Education

- **University of Rochester** — Rochester, NY
  M.S. and Ph.D. student in Computer Science — *Jun. 2016 – present*
- **Reutlingen University** — Reutlingen, Germany
  In Informatics — *Mar. 2015 – Oct. 2015*
- **Donghua University** — Shanghai, China
  B.S. in Computer Science — *Aug. 2012 – May. 2016*

Research Interests

Audio-Visual Understanding, and Multi-Modal Vision-and-X Modeling.

Research Experience

- **Facebook Reality Lab** — Pittsburgh, PA
  Incoming Research Intern — *Jul. 2020 - Dec. 2020*
  - **AR/VR Talking Avatar**
    Advisor: Prof. Chenliang Xu (UR-CS), Dr. Chen Cao (Facebook), Prof. Fernando De la Torre (CMU)
    We are aiming to develop AR/VR talking avatar for remote video call, which is crucial to many applications, e.g., enhancing speech comprehension while preserving privacy or assistive devices for hearing impaired people.
- **URCS** — Rochester, NY
  Research Assistant — *Jan. 2017 - present*
  - **Audio-Visual Understanding**
    Advisor: Prof. Chenliang Xu (UR-CS), Prof. Zhiyao Duan(UR-ECE), Prof. Ross Maddox (UR-BME)
    We conduct systematic investigations to integrate two modalities (vision and audition) towards a more comprehensive audio-visual scene understanding. Designing algorithms that jointly model audio and visual modalities towards a complete audio-visual scene understanding can enable novel applications, including multimedia (video indexing and scene editing), and healthcare (assistive devices for visually and aurally impaired people).
  - **Medical MRI Image Understanding**
    Advisor: Prof. Chenliang Xu (UR-CS), Prof. Axel W. E. Wismller (UR-BME)
    Cooperating with UR Medical Center, we develop an efficient and accurate Glioma segmentation algorithm in MRI data to provide valuable assistance for treatment planning, and disease progression monitoring for oncological patients.
  - **Image Generation**
    Advisor: Prof. Chenliang Xu (UR-CS), Prof. Jiebo Luo (UR-CS)
    We propose a texture preserving image generation model to synthesize human body images based on sketch. In this project, we propose an unsupervised pose flow learning scheme that learns to transfer the appearance details from the source image.
- **OPPO US Research Center** — Palo Alto, CA
  Research Intern — *May 2019 - Aug. 2019*
  - **3D Human Avatar Digitization**
    Advisor: Prof. Chenliang Xu (UR-CS), Dr. Shuxue Quan (OPPO), Dr. Yi Xu (OPPO)
    We develop an efficient algorithm to reconstruct 3D human shape avatar from a single RGB image with keeping the realistic texture. We develop a mobile application that demonstrates this capability in AR/VR settings.
- **JDX Silicon Valley Research Center** — Sunnyvale, CA
  Research Intern — *May 2018 - Aug. 2018*
  - **Perception Module for Autonomous Delivery Robot**
    Advisor: Prof. Chenliang Xu (UR-CS), Dr. Hongda Mao (JD.com), Dr. Victor Zhu (JD.com)
    We develop a real-time algorithm to process image and Lidar data and output the vehicle/pedestrian/traffic-light detection results to the planning module.

- **VisualDX** Rochester, NY
  Research Intern *May 2017 - Sep. 2017*
  - **Medical Image Analysis**
    Advisor:Prof. Chenliang Xu (UR-CS), Dr. Art Papier
    We build several deep neural networks to classify skin diseases, skin lesions, and their anatomical locations, which was been developed to an ios App.

Publications

Qualifiers added where known: Impact Factor (IF), h5-Index (h5) provided by Google Scholar metrics.

- Z. Li*, **L. Chen***, C. Liu, Y. Gao, Y. Ha, C. Xu, S. Quan, Y. Xu. *Human Shape Avatar Digitization at a Glance.* In ACM SIGGRAPH International Conference on Virtual Reality Continuum and Its Applications in Industry, 2019. (*: equal contribution) **Best Paper Award (VRCAI)**
- **L. Chen***, J. Tian *, G. Li, C. Wu, E. King , K. Chen , S. Hsieh , C. Xu. *TailorGAN: Making User-Defined Fashion Designs.* In IEEE Winter Conference on Applications of Computer Vision, 2020. **(Oral presentation)** h5: 46 **(WACV)**
- **L. Chen**, H. Zheng, R.K. Maddox, Z. Duan, C. Xu. *Sound to Visual: Hierarchical Cross-Modal Talking Face Video Generation.* In IEEE Conference on Computer Vision and Pattern Recognition Workshops, pages 1-4, 2019. **(Spotlight)** h5: 47 **(CVPRW)**
- **L. Chen**, R. Maddox, Z. Duan and C. Xu. *Hierarchical Cross-modal Talking Face Generation with Dynamic Pixel-wise Loss.* In IEEE Conference on Computer Vision and Pattern Recognition, pages 7832-7841, 2019. h5: 240 **(CVPR)**
- **L. Chen***, Z. Li*, R.k. Maddox, Z. Duan and C. Xu. *Lip movements generation at a glance.* In Proc. of European Conference on Computer Vision, pages 538-553, 2018. **(Demo presentation)** h5: 137 **(ECCV)**
- **L. Chen**, E. Eskimez, Z. Li, Z. Duan, C. Xu, RK. Maddox. *Toward a visual assistive listening device: Real-time synthesis of a virtual talking face from acoustic speech using deep neural networks.* The Journal of the Acoustical Society of America, 143(3):1813-1813, 2018. IF: 1.8 **(JASA)**
- **L. Chen**, Y. Wu, A.M. DSouza, A.Z. Abidin, C. Xu and A. Wismller. *MRI Tumor Segmentation with Densely Connected 3D CNN.* In Proc. of SPIE Medical Imaging 2018: Image Processing, volume 105741, page 105741F, 2018. **(Oral presentation)** h5: 16 **(SPIE)**
- **L. Chen***, S. Srivastava*, Z. Duan and C. Xu. *Deep Cross-Modal Audio-Visual Generation.* In Proc. of the on Thematic Workshops of ACM Multimedia, pages 349-357, 2017. **(ACMMMW)**
- Anonymous, *VFS: Low-Latency Continuous Vision via Front-End Speculation.* Technical report, University of Rochester. (Submitted to **ISCA**)
- H. Zheng, **L. Chen**, C. Xu and J. Luo. *Texture Preserving Flow for Pose Guided Synthesis.* Technical report, ArXiv:1909.13819. (Submitted to IEEE Transactions on Image Processing **(TIP)**)
- H. Zheng, H. Liao, **L. Chen**, W. Xiong, T. Chen, and J. Luo. *Example-Guided Scene Image Synthesis using Masked Spatial-Channel Attention and Patch-Based Self-Supervision.* Technical report, ArXiv:1911.12362. (Submitted to **CVPR**)
- **L. Chen**, Z. Kou, C. Liu, Z. Li, S. Quan, Y. Xu, and C. Xu. *Talking-head Generation with Individual and Rhythmic Head Motion.* Technical report, University of Rochester. (Submitted to **CVPR**)

Honors & Awards

17th ACM SIGGRAPH VRCAI Best Paper Award	2019
CIRC Poster Session Best Poster Award	2017
Scholarship by University of Rochester (30% of tuition)	2016
Bronze Medal of Mathematical Contest in Modeling of Shanghai	2014
Scholarship for Academic Excellence	2013
Jinbao Scholarship for Top 10 Students	2013
Bronze Medal of ACM Contest of Donghua University	2013

University Services

- **Teaching Assistant**
  Spring 2020 CSC261/461:Intro. to Databases
  Spring 2019 CIS418: Advanced Business Modeling & Analysis
  Winter 2018 CSC261/461: Database Systems
  Fall 2017 GBA464: Programming for Analytics
  Fall 2019 CSC577: Advanced Topics in Computer Vision
  Winter 2018 CIS442: Data Management for Analytics
  Spring 2018 CIS442F: Big Data

- **PhD Admission Committee** Feb. 2020
  (CS, University of Rochester)

- **Student Advising**
  - **MS Students** Purvanshi Mehta (UR-DS), Justin Tian (UR-CS), Ziyi Kou (UR-CS), Guofeng Cui (UR-CS), Guo Li (UR-CS)
  - **Undergraduate Students** Canruo Zou (UR-CS)

Professional Activities

- **Journal Reviewer**: ∗IEEE Transactions on Image Processing, ∗Neurocomputing, ∗IEEE Access
- **Conference Reviewer**: WACV 2020
- **Membership**: IEEE Student Member, ACM Student Member

Invited Talks

- From Image Generation to Video Generation
  - NSF NRT mini-conference, University of Rochester Sep. 2019
- Combination of Generative Adversarial Network and 3D Graphics Modeling
  - JD AI Research Aug. 2019
- Sound to Visual: Hierarchical Cross-Modal Talking Face Generation
  - Sight & Sound Workshop, CVPR 2019 Jun. 2019
- Cross-Modal Audio-Visual Generation
  - VISTA Lab, University of Rochester Apr. 2017

Leadership

- Rochester Vision Group, Lab Manager Nov. 2017 - present
  - Maintain the GPU Cloud Computing Server at the hardware-level and system-level. Suggest the new sever purchase (up to $50,000). Manage the Cloud Computing Server accounts for new lab researchers and create new environments for their research.
- CSC261 Teaching Assistant Group, Leader Winter 2018, Spring 2020
  - Create and design the course project for CSC261 (45% of the final grade). Demonstrate lecture tutorials and reviews. Create and manage department SQL Web Server to hold student's websites. Coordinate other TAs' TA hours, teaching sessions, etc.
- University Youth League, Vice President Jun. 2013 - Dec. 2015
  - Coordinate company visits, schedule events. Oversee budgeting of other officers, orchestrate fundraising activities, purchase and select prizes and food for in-house events.

Volunteer Work

- Volunteered Lecture 10 hours (ongoing)
  Demonstrate several tutorial lectures per year(2018-2020) to different URCS courses on GPU cloud server usage, artificial intelligence research, website design and database design, etc.
- URCS Department Cleaning Committee 1 year (ongoing)
  - Member of URCS cleaning committee (2019-2020). The core tasks are throwing out spoiled or unlabeled food in both the 3rd floor and grad lounge fridges and wiping them down, as well as cleaning the microwaves in those two spaces and cleaning the countertops in the kitchen.
- Public Speaking with Ignite 20 hours
  - Gave several lectures per year(2013-2015) to local high school students on computer science research.