RESEARCH PROJECTS

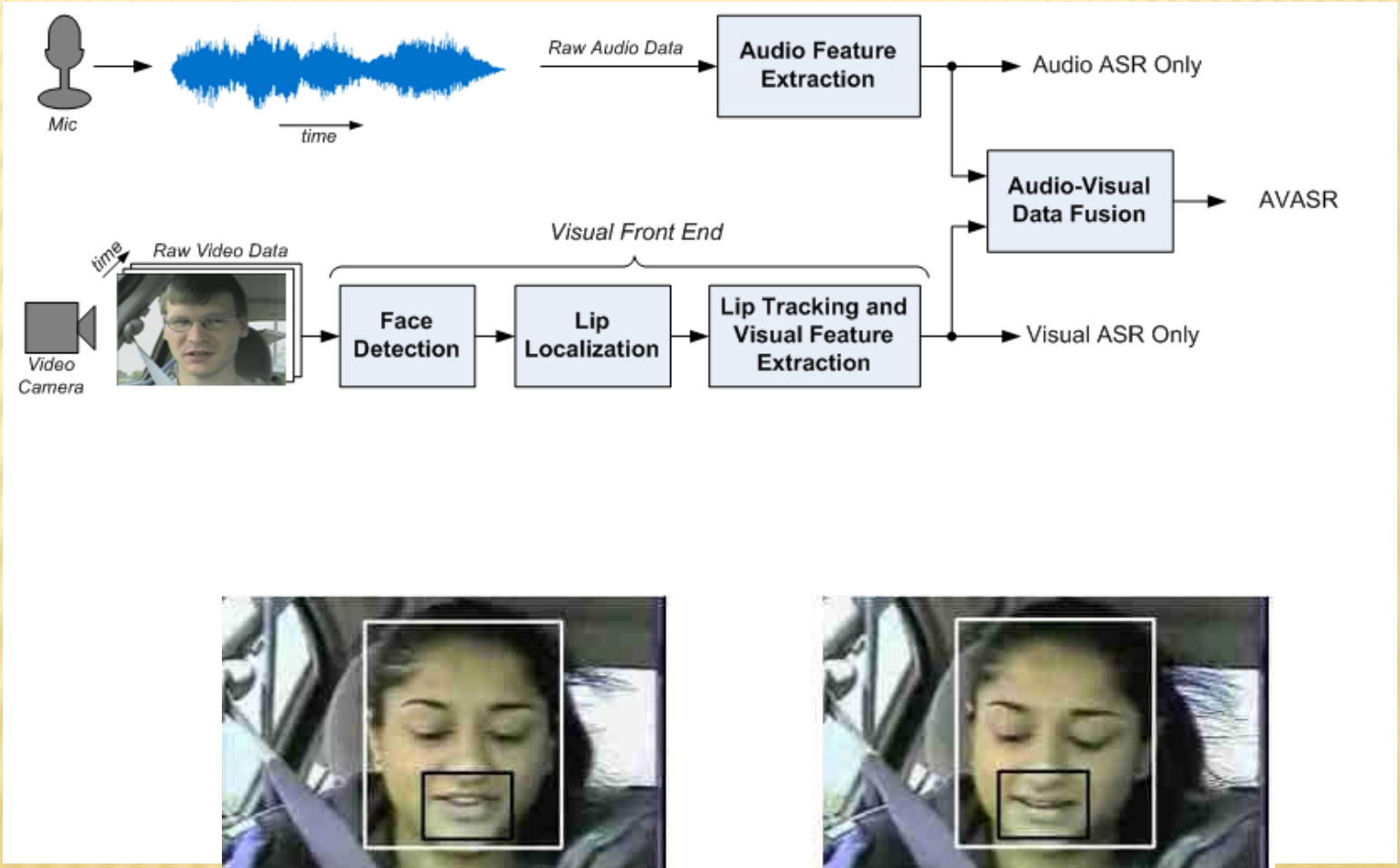
Dr. Jane Zhang

2019

RESEARCH BACKGROUND

- Research Interests: Digital Signal and Image Processing, Computer Vision, Machine Learning
- Courses taught (recommended sequence of courses to take for thesis students):
  - EE 528 Digital Image Processing (F)
  - EE/CPE 428 Computer Vision (W)
  - EE 516 Pattern Recognition (S)

AUDIO-VISUAL AUTOMATIC SPEECH RECOGNITION (AVASR) SYSTEM



SMART FARMING

- The world population will reach 9 billion by 2050; finding smarter ways to grow our food is essential.
- Projects:
  - Strawberry yield estimation using image-based solution
  - Yield prediction by monitoring the growth of the plant
  - Disease detection

OTHER TOPICS …

- Smart parking (smart cities)
- Tumor detection (medical image analysis)
- Vision-based Fall detection (health monitoring, human action recognition)
- Lane detection, pedestrian detection, traffic sign detection for self-driving cars
- Traffic congestion assessment
- …

RECENT MASTERS THESES ADVISED

- *Viewpoint Optimization for Autonomous Strawberry Harvesting with Deep Reinforcement Learning*, J. Sather, 2019
- *A Study of Face Embedding for Face Recognition Using Neural Network*, K. Le, 2019
- *Strawberry Detection Under Various Harvestation Stages*, Y. Fitter, 2019
- *Automated Pruning of Greenhouse Indeterminate Tomato Plants,* J. Angeja, 2018
- *Modeling the Spatially Varying Point Spread Function of a Kirkpatrick-Baez Optic*, N. Adelman, 2018
- *Strawberry Harvest Prediction Using Computer Vision and Pattern Recognition*, A. Apitz, 2018
- *Workplace Posture Assessment and Biofeedback with Kinect,* M. Crussell, 2017
- *A Comparison of Image Processing Techniques for Strawberry Detection*, W. Chern, 2017
- *Lip Detection and Adaptive Tracking*, B. Wang, 2016