HENGYUE LIU

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EDUCATION

University of California, Riverside *Expected Jun. 2022*
Ph.D. in Electrical Engineering. GPA: 3.85/4.0
Advisor: Prof. Bir Bhanu.

University of Southern California *Jan. 2015 - Dec. 2016*
M.Sc. in Electrical Engineering (Multimedia and Creative Technologies). GPA: 3.83/4.0

Beijing University of Posts and Telecommunications *Sep. 2010 - June. 2014*
B.Sc. in Telecommunications Engineering with Management. GPA: 85.6/100
Joint program with Queen Mary University of London.
Advisor: Yan Shi.

EXPERIENCE

Latent AI Jun. 2019 - Sep. 2019
Research Intern *Princeton, NJ*

· Designed and implemented video classification/gesture recognition models with gateable 2D/3D convolutional and dense layers. The test accuracy is 92% on 20BN-jester Dataset V1.
· Implemented throttleable neural networks that can save energy based on run-time environment. The utilization of the whole network can be as low as 10% while maintaining 41% accuracy.
· Implemented and experimented controller networks to adaptively control throttleable neural networks for best energy-accuracy trade-off using Deep Q-Learning variant. For gesture recognition systems, the run-time power is much lower when there is no gesture and higher when scene changes on demand.

Frenzy Labs Inc Feb. 2017 - Aug. 2017
Head of Computer Vision *Los Angeles, CA*

· Managed a small team of 5 engineers for building exact garment visual search APIs and systems as a team leader and full-stack engineer, and helped the company secure seed funding.
· Designed and implemented deep learning architectures for fine-grained garment classification. A hierarchical model was developed consisting of a base architecture such as VGG-19 and Inception-v3 for coarse classification (shoes, tops, bottoms, etc.), and several sub-category classifiers (high heels, loafers, sneakers, etc.).
· Implemented RESTful APIs and back-end modules for keypoint detection and object recognition.
· Implemented a parallel query and process job client and server application for retrieving product images given certain cues (e.g. garment category, material, color, etc).
· Configured and deployed the landing page and web applications on AWS EC2 server.

CloudSight Inc May. 2016 - Dec. 2016
Computer Vision Intern *Los Angeles, CA*

· Implemented a large-scale image retrieval system (over 10k images) with Bag of Words matching and term frequency inverse document frequency (tf-idf) structure.
· Implemented an image sentiment evaluation algorithm/text classification through Word Embedding and Convolutional Neural Networks with 95.9% accuracy.

· Implemented a dense circular object detection and counting algorithm with 95% accuracy and 0.89 recall using traditional image processing techniques such as Hough transform and Morphological operations.

Tsinghua University Jul. 2013 - Sep. 2013
Software Engineer Intern *Beijing, China*

· Implemented an accurate disease prediction web services for a large project "Community Health Care Cloud Platforms" involving 32 members from different disciplines. The prediction is a mixture of data regression and medical formulas on over 20 different types of measurements of human body.
· Assisted in implementing and testing the online user management system over 80 hours.

PUBLICATIONS

[1] **Hengyue Liu** and Bir Bhanu. Pose-guided r-cnn for jersey number recognition in sports. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, June 2019 (link).

[2] **Hengyue Liu**, Jesse Hostetler, and Sek Chai. Context-aware control for dynamic execution of deep networks, 2020 (Submission planned)

[3] **Hengyue Liu** and Bir Bhanu. Content-based player identification and tracking in soccer videos, 2020 (Work in progress)

ACADEMIC SERVICES

Research Assistant *Fall 2018 - Present*
VISlab, ECE department, UC Riverside, advised by Bir Bhanu. *Riverside, CA*

Teaching Assistant *Winter 2019*
TA for class Engineering Circuit Analysis I (UCR EE001A). *Riverside, CA*

Research Assistant *May 2013 - May 2014*
State Key Laboratory of Switching and Networking, BUPT , advised by Yan Shi. *Beijing, China*

HONORS AND AWARDS

Dean's Distinguished Fellowship, UC Riverside. 2017

Mathematical Contest in Modeling Meritorious Winner (top 15% of 6000 teams worldwide). 2013

1^{st}-class college scholarship, BUPT (top 10%). 2011, 2012, 2013

China National Tri-Merit Student (top 1%). 2010

TECHNICAL SKILLS

Languages	Python, Matlab, C/C++, Java, PHP, HTML, Javascript, Shell Script, SQL.
Frameworks	Tensorflow, Keras, PyTorch, Caffe, Torch, MXNet, Scikit-learn, OpenCV.
Miscellaneous	Git, LaTeX, OpenMP, OpenGL, Docker, Amazon Web Services, Spark, Supervisor, Gearman, AngularJS.
Software	Blender, Unity, Adobe Illustrator, Adobe Photoshop.