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AIYU CUI

EDUCATION

UNIVERSITY OF ILLINOIS **URBANA, IL**
- Pursuing **Ph.D.** in **Computer Science** will start in Aug 2018

PENNSYLVANIA STATE UNIVERSITY **STATE COLLEGE, PA**
- **B.S Honor** in **Computer Science**, minor in **Math** (magna cum laude) Aug 2014 – May 2018
- Honor Thesis: **Multiple Object Tracking** supervised **Dr. Robert Collins**

RESEARCH EXPERIENCES

SPORT ANALYSIS: QUANTIFIED ANALYSIS ACROSS SUBJECTS **08/2017-**
- Supervisor: *Dr. Robert Collins*, CSE, Penn State, University Park
- Integrate computer vision and biomechanical techniques to predict the physical property of human subjects in video
- Design learning based methods to recognize actions on skeleton data
- Analysis the efficiency of different human skeleton representations (absolute/relative joint location/angle)

MUTIPLE SUBJECTS TRACKING: A CUSTOMIZED KALMAN FILTER **03/2017-**
- Supervisor: *Dr. Robert Collins*, Penn State, University Park
- Design and implement algorithm to track multiple subjects forming by a set of markers
- Fill the markers missing time gaps and fix the mis-association tracking problem
- Imbed this Matlab algorithm with Vicon Nexus motion capture system

A SURVEY ON MALICIOUS JAVASCRIPT DETECTION **10/2015-05/2016**
- Supervisor: *Dr. Zhifeng Xiao*, CS, Penn State Erie
- Survey and summary existing machine learning methods about malicious JavaScript detection
- Write software to collect malicious JavaScript online daily on Linux

SELECTED PROJECTS

ANIMAL IMAGES CLASSIFICATION **04/2017-05/2017**
- Use transferred learning method to fine-tune last few layers of a pre-trained CNN
- Apply SVM and Multiple Layer Perceptron (MLP) to classify animals into several species categories.

NAÏVE BAYES SPAM FILTER **10/2016 - 11/2016**
- Implement Naïve Bayes classifier to filter spam
- Improve the accuracy to 98% by optimizing the feature selections.

RANDOM TEXT GENERATOR **11/2016**

- Enable computer to generate meaningful sentences after learning given literatures in Markov Model

RELATED COURSE TAKEN

- CSE 586: Advanced Computer Vision
- CSE 583: Pattern Recognition
- CMPSC 442: Artificial Intelligence
- CMPSC 458: Graphics
- MATH 414: Intro to Probability
- MATH 415: Intro to Statistics
- MATH 441: Matrix Algebra
- MATH 221: Linear Algebra

JOB HISTORY

RESEARCH ASSISTANT | PENN STATE UNIVERSITY **05/2017 -**

- Conduct research along with professors in Laboratory of Perception, Action and Cognition (LPAC) with Dr. Robert Collins and Dr. Yanxi Liu

SOFTWARE ENGINEER INTERN | IESLAB **05/2016 - 06/2016**

- Implement a front-end user interface for Electricity companies manage their readings of meters

TEACHING ASSISTANT | PENN STATE UNIVERSITY **08/2015 - 12/2015**

- Assist teaching of Physics 212: Electricity and Magnetism
- Hold Q/A session, teach lectures, hold labs, and grade assignments and exams

GRADER | PENN STATE UNIVERSITY **01/2015 - 12/2015**

- Grade assignments and exams for CMPSC 121: intro to C++
- Grade assignments and exams for MATH 141: Calculus 2

PROGRAMMING SKILLS

- Languages: C, C++ (major), Java, Python (major)
- Math: Matlab (major), R
- Others: Vicon Nexus, OpenGL, Verilog, VHDL, AutoCAD

VOLUNTEER EXPERIENCES

- Peer mentor of new honor students, Schreyer Honor College, Penn State 08/2017-
- Ice Show Performer, Penn State Adult Figure Skating Community 03/2017 - 04/2017
- Mental Support Group Member, Penn State Student Health Center 08/2016 - 12/2016
- Peer mentor of new freshmen, Penn State 08/2015 - 05/2016
- Career Fair Volunteer, Penn State 2014, 2015 & 2016