Youya Xia

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Education

Cornell University
Ithaca, New York

PH.D. IN COMPUTER SCIENCE — *Aug. 2019 - May 2024*

- Focused on robotics,reinforcement learning and computer vision

University of Minnesota, Twin Cities
Minneapolis,Minnesota

B.S. IN COMPUTER SCIENCE AND MATHEMATICS — *Sep. 2015 - May 2019*

- with high distinction

Research Experience

Interactive Robotics and Vision Lab
University of Minnesota, Twin Cities

UNDERGRADUATE RESEARCH ASSISTANT UNDER THE GUIDANCE OF PROF.JUNAED SATTAR — *Feb. 2018 - Aug. 2019*

- Visual Diver Recognition for Underwater Human-Robot Collaboration:
  -propose the first vision-based algorithm in the underwater robots area to detect specific diver underwater using deep learning neural network, feature extraction and K-Means clustering algorithm such that the algorithm can not only detect divers underwater but also differentiate between different divers
  -leading author of the paper-Visual Diver Recognition for Underwater Human-Robot Collaboration which has been accepted by the IEEE International Conference on Robotics and Automation 2019
  -Website link to my research:http://irvlab.cs.umn.edu/projects/visual-diver-identification-underwater-hri

- Pose-association:
  -Let robots understand divers' pose underwater.We use Open pose to extract points on the divers' bodies
  -Associating persons' poses from different cameras and scenes using four different person re-identification techniques

- Underwater image enhancement:
  -work with a Ph.D. student to design a Generative Adversarial Network to improve the quality of underwater images
  -Collecting and releasing an unique underwater image dataset

- Marine Trash Project:
  -help label marine trash data for the project of building a deep vision detection model to detect marine litter
  -get recognition at the end of the paper-Robotic Detection of Marine Litter Using Deep Visual Detection Models which has been submitted by the IEEE/RSJ International Conference on Intelligent Robots and Systems 2018

- other work:
  -help conduct monthly pool or lake trials for underwater robots
  -help fix software malfunctioning of robots in our lab

GroupLens Lab
University of Minnesota, Twin Cities

UNDERGRADUATE RESEARCH ASSISTANT UNDER THE GUIDANCE OF MAX HARPER — *Sep. 2017 - Apr. 2018*

- Moviemood project:
  -help build a movie recommendation system which recommends movies based on the mood words users suggest using natural language processing toolkits, such as Gensim and spaCy

Working Experience

Department of Computer Science and Engineering
University of Minnesota, Twin Cities

TEACHING ASSISTANT FOR CSCI 2011(DISCRETE MATHEMATICS) — *Sep. 2018 - Dec. 2018*

- Construct and grade weekly quiz for CSCI2011
- Hold weekly office hours to answer students questions about lectures, homework and quizzes for CSCI 2011

Department of Computer Science and Engineering *University of Minnesota, Twin Cities*

Teaching Assistant for CSCI 2033(Linear Algebra) *Jan. 2019 - May. 2019*

- Grade weekly homework, midterms and final for CSCI2033
- Hold weekly office hours to answer students questions about lectures, homework and quizzes for CSCI 2033

Department of Computer Science and Engineering *University of Minnesota,Twin Cities*

Undergraduate research assistant *May. 2018 - Aug. 2018*

- appointed by professor Junaed Sattar as a paid undergraduate research assistant during summer 2018
- conducted the previously stated specific diver detection research project and helped conduct several pool trials and lake trials during summer

School of Mathematics *University of Minnesota,Twin Cities*

Grader for Math 2263(Mutlivariable Calculus) *Jun. 2017 - Aug. 2017*

- Helped grade weekly quizzes and homework for Math 2263.
- Helped maintain students' records about quizzes,midterm, finals and homework for Math 2263

Honors & Awards

May 2019 **RAS Travel Grant**, A reward offered to participants of ICRA2019 — *Robotics and Automation Society*

2015-2018 **Dean's list**, A reward offered to students with semester GPA 3.666 or higher — *University of Minnesota*

2015-2019 **Global Excellence scholarship**, A reward offered to excellent incoming students — *University of Minnesota*

Skills

Programming	Python, JAVA, OCaml, Matlab,LaTeX,C++,MySQL,C,Lisp,Julia
Computer Vision	Opencv
Machine Learning	Tensorflow,Caffe
Robotics System	Robotics Operating System
Natural Language Processing	Gensim,spaCy
Reinforcement learning	Gym

Publication

Visual Diver Recognition for Underwater Human-Robot Collaboration *https://arxiv.org/abs/1809.10201*

Youya Xia,Junaed Sattar *Sep.2018*

- Accepted by the IEEE International Conference on Robotics and Automation, ICRA2019. arXiv preprint available.

Fast Underwater Image Enhancement for Improved Visual Perception *https://arxiv.org/abs/1903.09766*

Md Jahidul Islam, Youya Xia,Junaed Sattar *Mar.2019*

- In submission to the IEEE International Conference on Robotics and Automation, ICRA2020 (joint submission to RA-L). arXiv preprint available.