KAIWEN ZHOU

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EDUCATION

Zhejiang University *B.S. in Statistics*   ***GPA: 3.88/4.00***   Sep 2017 – Present

Main courses: *Mathematical Analysis, Advanced Algebra, Discrete Mathematics, Probability Theory, Mathematical Statistics, Real Variable Analysis, Regression Analysis, Computer Simulation, Multi-Variable Statistical Analysis, Stochastic Processes, Time series, C Programing, Fundamentals of Data Structures, Artificial Intelligence, Natural Language Processing, Statistical Learning, Object-Oriented Programming(c++), Theory of Database System*

RESEARCH EXPERIENCES

A study on Pose Estimation   **Hangzhou, China**

Research Leader   Advisor: **Prof. Nenggan Zheng**   Feb 2020-Present

• Found shortcomings from the theory and output results of state of the art methods of pose estimation.

• Tried to improved the result by adjusting the loss function, data preprocessing method, and the estimation process.

Behavior pattern recognition and trajectory prediction of Drosophila   **Hangzhou, China**

Research Assistant   Advisor: **Prof. Nenggan Zheng**   Nov 2019-Present

• Took videos of a certain amount of drosophila flying inside the box; obtain the three-dimensional trajectory of drosophila by using image recognition algorithms.

• Constructed a neural network using PyTorch which could predict future trajectory based on former flying trajectory.

• Identified and clustered behavior patterns of Drosophila.

PDE-based Image Denoising   **Hangzhou, China**

Research Leader   Advisor: **Prof. Xiaoliang Cheng**   Jul 2019-Aug 2019

• Collected available PDE techniques to reduce image noise, learned related principles; wrote codes for image denoising and verified them with several typical images.

• Effectively prevented over-diffusion and edge blurring in image denoising when relevant indicators fell by stop denoising when SNR start falling.

• Improve the results of all the selected algorithms on character, cartoon, landscape pictures by automatic stop denoising.

OpenCV-based Dual Camera Calibration   **Hangzhou, China**

Individual Research Project   Advisor: **Prof. Nenggan Zheng**   Jul 2019-Aug 2019

• Wrote a biphasic calibration program based on Python and OpenCV; took photos of a fixed Charuco calibration plate with two cameras; obtained the internal and external camera parameters after uploading photos into the program.

• Checked and verified the correctness of the program by inputting identical and similar photos.

• Successfully wrote a reliable program that could calibrate internal and external parameters of dual cameras.

PROJECT EXPERIENCE

Dream Summer Program   **Hangzhou, China**

School of Mathematical Sciences, Zhejiang University   Jul 2018-Jul 2018

• Worked in a team of 10 people on exploring the developments of national key areas; planned visits to a number of companies.

• Conducted interviews with managerial personnel from each company; summarized the interview content and posted the company visits articles onto school websites.

• Learned about Alibaba's unique corporate sculpture and martial arts; learned new retail technologies, AR shopping guides and other new technologies; gained a better understanding of problems in information network security and related technologies after visiting Zhejiang Yuanwang Information Co., Ltd.

AWARDS

• First Prize in National College Students' Mathematical Modeling Contest	Sep 2019
• Zhejiang Provincial Government Scholarship	Oct 2019
• Zhejiang University Second-class Scholarship	Sep 2019
• Third Prize in Zhejiang Undergraduate Physics (Theory) Innovation Contest	Dec 2018
• Third Prize in Zhejiang Undergraduate Advanced Mathematics (Calculus) Competition	May 2018

SKILLS & LANGUAGES

Computer skills: Python; C/C++; Matlab; R; Stata

Languages: Chinese (Native); English (TOEFL 97; R: 28; L: 23; S: 20; W: 26)