Zipei Wu (she/her)
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EDUCATION

SHENZHEN UNIVERSITY Shenzhen, Guangdong Province, China 09/2020–present

- Bachelor of Opto-Electronics Information Science and Engineering, Overall GPA: **4.09**/ 4.50 (3/176 in OEISE Dept)
- Programming & software: MATLAB, Python; ZEMAX, LaTeX, SPSS, Stata, Pymol

Awards and Honors

Hanben Niu Academician Scholarship (awarded to top 8 undergraduate students in each academic year) 02/2023
Second-class Academic scholarship of Shenzhen University (awarded to top 3% students in each academic year) 12/2022
Third-class Academic scholarship of Shenzhen University (awarded to top 6% students in each academic year) 12/2021

PUBLICATION

- Zipei Wu, Zeyu Xiao, Sihan Wua, Wei Yana, Xiaoying Zhang, Xiao Peng. "Fusion protein localization predicted by Alphafold2" SPIE, 2023. (06/2023 submitted)
- Review: Development of Fourier ptychographic microscopy over the past ten years. (in preparation)

PATENT

- A self-cleaning intelligent nursing robot. China Invention Patent. (05/2023 submitted)

RESEARCH EXPERIENCE

Fourier ptychographic microscopy 10 years on illumination modes and reconstruction approaches 06/2023-present
Research Assistant, Supervised by Prof. An Pan Xi'an Institute of Optics and Precision Mechanics of CAS, Shanxi, China

- Achieved mastery in the principles of phase retrieval algorithm and synthetic aperture imaging.
- Surveyed and prepared a review on the advancements in Fourier ptychographic microscopy over the past decade.

Fusion protein localization predicted by Alphafold2 02/2023-present
Research Assistant, Supervised by Prof. Xiao Peng Shenzhen University, Guangdong, China

- Attained a comprehensive understanding of the distinctions and functionalities of various docking simulation tools.
- Independently modeled the combination of Alphafold2 with molecular docking simulations to predict the targeting effect of fusion fluorescent proteins.
- Successfully predicted the targeting effect of fluorescent proteins EGFP and mCherry fused to the cytoskeleton protein, in good agreement with the experiments.
- Officially set up a project funded by Guangdong province and finished one paper submitted to SPIE. Our work has been accepted and postered in The 2nd Biomedical Photonics Cross-Integration Academic Conference.

Research on the optical properties of fluorescent proteins based on AI 10/2022-present
Research Assistant, Supervised by Prof. Xiao Peng Shenzhen University, Guangdong, China

- Mastered the theory of protein structure prediction and fluorescent proteins.
- Developed a fluorescent protein database including the structures predicted by Alphafold2 on Google Colab, excitation wavelength, emission wavelength, stokes shift, etc.
- Established a project supported by the Innovation and Development Fund of Shenzhen University.

EXTRA-CURRICULUM ACTIVITIES

Mathematical Contest in Modeling 05/2023

- Designated as Meritorious Winner. Problems of guessing times in a popular crossword puzzle *Wordle*.
- Led a team of three individuals, fully responsible for organizing workflow and efficiently processing data using SPSS.

China Undergraduate Mathematical Contest in Modeling 11/2022

- Won the national second prize and the first prize in Guangdong province. Problems of analysis of ancient glasses.
- Utilized MATLAB to perform Systematic Clustering and K-means analysis to classify glasses into distinct types.

Interdisciplinary Contest in Modeling 05/2021

- Designated as Honorable Mention. Problems of evaluation of carbon sequestration.
- Constructed multiple linear regression model on Stata to obtain the coefficients of related functions.

Volunteer Service 09/2020-present

- Actively participated in volunteer activities, dedicating a total of 352.4 hours to service over the past three years.
- Awarded as the Outstanding Volunteer three times.

TEACHING

Freshman Advisor 09/2022-present

- Provided guidance to freshmen regarding curriculum, accommodation, and financial matters.
- Facilitated class meetings with freshmen to organize the election of committee members.