

Zhangxing Bian

MACHINE VISION · SOFTWARE ENGINEER · PRACTITIONER

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Prof. Hu Group

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MDP PROJECT

Application for Project: Adaptive Designs for Human Mobility Safety

Dear Prof. Hu,

About Me

Thank you for considering me for the “Adaptive Designs for Human Mobility Safety” project. I am a M.S. student in Computer Engineering and my major area is Computer Vision. I have a wide range of experience in medical image, signal processing and computer vision. Also, I have 3+ years of programming experience for scientific research in image processing and machine learning.

Why This Project?

I am very interested in joining this team for two reasons. First, I am very passionate about the healthcare industry. I have noticed that this industry grows very fast, and applying the techniques of data science and computer science into this field can produce great values. I believe this field has a prosperous future. My career plan is to enter a research institute or company that focuses on the healthcare field after my graduation. So I strongly believe this valuable experience can help me achieve my career goal. Second, this project can provide me with a great opportunity to apply the skills I have learned, like machine learning, signal processing, and image processing to the actual healthcare application to produce practical value and meaning.

Why Me?

- I have strong background in **3D reconstruction** and **medical image processing**. For example, in my most recent internship with Chinese Academy of Medical Sciences, I worked with doctors, product managers and computer scientists to develop a system to diagnose skin disease. In that role, I made a largest dataset (by 2018) with 2k clinical vitiligo images. This work includes annotating, data cleaning and preprocessing. Then I used deep learning and machine learning skills to extract features from the data and perform the diagnosis (classify the disease and segment the lesion).
- I am proficient in programming in Python and MATLAB. My algorithms in my recent published paper (BIBM 2019) are implemented in these two languages.
- I have a publication (BIBM 2019) in related field. In this work, I proposed a novel framework to segment the skin lesion through images.
- I once set up a **machine vision system** to reconstruct the 3D face model from a bunch of 2D images captured from the different angles. I tackled some challenges, e.g. how to calibrate multiple cameras, how to maximize the receptive field with least cameras, how to set up cameras to maximize the accuracy of the measurement. And I used the **parametric 3D face model** in this procedure. I believe this experience will somehow benefit to build and parametrize the 3D body model.
- I will bring Friendliness, Dependability and Positive attitude to your team!

Sincerely,

Zhangxing Bian