Fan
ZHANG

Date of birth: 1989/06/13
Nationality: Chinese
Email: vanzh89@gmail.com
Website: fzhang.me

EDUCATION BACKGROUNDS

11/13-11/18 **Delft University of Technology** The Netherlands
Ph.D. in Perceptual Intelligence - Visual Perception
EU Marie-Curie ITN (FP7)

- Promotors: Prof. Sylvia Pont and Prof. Huib de Ridder
- Thesis**:** *On Probing Appearance: Testing Material-Lighting Interactions in an Image-based Canonical Approach*

09/12-09/13 **King's College London** United Kingdom
M.Sc. in Robotics

- Graduate with Distinction
- Thesis: *A Neural Network for Solving the Stereo Correspondence Problem*

09/07-07/11 **Shanghai Jiao Tong University** China
B.Eng. in Mechanical Engineering and Automation

- Thesis: *The Identification of Tool Cutting Condition Based on Acoustic Emission Signal*

POSTDOCTORAL EXPERIENCES

12/19-present **University of Birmingham** United Kingdom
Research Fellow (postdoctoral)
ESRC-NSF(SBE) with Dr. Dietmar Heinke at Psychology Department

- Develop computational models of visual attention and reaching action
- Simulate human reaching behaviors using a 3-joint robot arm
- Supervise MSc and BSc students in research modules and their Thesis projects
- Establish online experiments

12/18-07/19 **Delft University of Technology** The Netherlands
Research Fellow (postdoctoral)

- External project funded by Procter & Gamble (Germany)
- Measure and model user's multisensory premium-ness experience on certain products
  - Create video stimuli that convey multisensory information for the products
  - Design user-friendly interface for testing user's visual-tactile perception
  - Represent product premium-ness as a function of physical attributes
- Provide guidelines for improving the empirical product design process
- Deliver internal reports and other deliverables (e.g. video demos) to P&G

COLLABORATIONS AND SECONDMENTS

12/20-now **Cognition and Modelling** United States

Collaborator: Dr. Joo-Hyun Song, at University of Brown

- Understand how recent selection history biases target selection performance via concerted operation between the selection of attention and action

04/16-11/18 **Visual optimization for material appearance** France

Collaborator: Dr. Pascal Barla, at INRIA Bordeaux Sud-Ouest

- Improve user's visual experience on materials by providing optimal lighting
  - Develop prototypes of canonical material and lighting modes using optics-based computational models (OpenGL)
  - Develop a protocol to test complex material-lighting interactions
  - Validate predictions of lighting effects on canonical materials

02/15-05/15 **Prototyping** Germany

Secondment, hosted by Prof. Roland Fleming at University of Giessen

- Develop prototypes of canonical material modes using 3D modelling (Blender) and rendering (Maxwell Render)
- Experimental design for testing glossiness perception in a project collaborating with a local car coating company

GRADUATION SUPERVISION

Omer Bahadir Eryilmaz	MSc Computational Neuroscience and Cognitive Robotics Thesis Supervision, Graduated Sep.2020
Yat Fong	BSc Psychology Thesis Supervision, ongoing
Vasile Boico	BSc Psychology Thesis Supervision, ongoing

TEACHING ACTIVITY

09/20-01/21	MSc Computational Neuroscience and Cognitive Robotics Module - Practical Research Skills

PROFESSION SKILLS

Programming:	MATLAB, JavaScript(jsPsych), OpenGLSL
Statistical Analysis:	MATLAB, SPSS/JASP, R
Design and Engineering:	Blender, Maxwell Render, Photoshop, AutoCAD
Language:	Mandarin Chinese (native); English (proficient)

PUBLICATION LIST

Journal Paper

Effects of light direction and shape on the visual perception of canonical materials.
Zhang, F., de Ridder, H., Barla, P., & Pont, S. (2020).
Journal of Vision, *20*(4), 1-18. doi:10.1167/jov.20.4.13

A systematical approach to testing and predicting light-material interactions.
Zhang, F., de Ridder, H., Barla, P., & Pont, S. (2019).
Journal of Vision, *19*(4), 1-22. doi:10.1167/19.4.11

Asymmetric perceptual confounds between canonical lightings and materials.
Zhang, F., de Ridder, H., & Pont, S. (2018).
Journal of Vision, *18*(11), 1-19. doi:10.1167/18.11.11

MatMix 1.0: Using optical mixing to probe visual material perception.
Zhang, F., de Ridder, H., Fleming, R. W., & Pont, S. (2016).
Journal of Vision, *16*(6), 11, 1-18. doi:10.1167/16.6.11

Conference Paper

The influence of lighting on visual perception of material qualities.
Zhang, F., de Ridder, H., & Pont, S. (2015).
In Proc. SPIE/IS&T 9394, Human Vision and Electronic Imaging XX, (pp. 93940Q-93940Q). The international society for optics and photonics. doi:10.1117/12.2085021

Invited Talk

Visual perception of canonical material modes and its interactions with canonical lighting modes.
Zhang, F., de Ridder, H., & Pont, S. (2016, December).
FriKo, at the Max Planck Institute for Biological Cybernetics, in Tübingen, Germany.

Conference Abstract

Canonical specular and velvety material modes form a basic feature in visual search.
Zhang, F., & Heinke, D. (Accepted).
Poster presentation at 2021 Visual Science Society Annual Meeting

Dissociating mechanism underlying selection history bias for goal-directed reaching movements.
Makwana, M., Zhang, F., Song, J., & Heinke, D. (Accepted).
Poster presentation at 2021 Visual Science Society Annual Meeting

Lighting effects on the perception of fresh produce.
Zhang, F., & Pont, S. (2019, Poster).
Journal of vision, *19*(10), 244-244. doi:10.1167/19.10.244

Material dependent appearance effects brought out by natural light environments.
Zhang, F., de Ridder, H., Barla, P., & Pont, S. (2017).
Poster session presented at European Conference on Visual Perception (ECVP), Berlin, Germany

Conference Abstract

The interplay between material qualities and lighting.
Zhang, F., de Ridder, H., van Egmond, R., & Pont, S. (2017, Talk).
Journal of vision, *17*(10), 228-228. doi:10.1167/17.10.228

Canonical Material and Illumination Confounds.
Zhang, F., de Ridder, H., & Pont, S. (2016, Poster).
In *PERCEPTION* (Vol. 45, pp. 130-130).

Can people match optically mixed canonical lighting modes?
Zhang, F., de Ridder, H., & Pont, S. (2016, Poster).
Journal of Vision, *16*(12), 642-642. doi:10.1167/16.12.642

The influence of illumination on perception of works by Jan Schoonhoven
Wijntjes, M., te Pas, S., Schoemaker, M., Pont, S., Zhang, F., Kartashova, T., & van Middelkoop, C., (2016).
Poster session presented at Visual Science of Art Conference (VSAC), Barcelona, Spain

Matmix 1.0, a noval material probe for quantitatively measuring visual perception of materials.
Zhang, F., de Ridder, H., & Pont, S. (2015, Poster).
Journal of Vision, *15*(12), 824-824. doi:10.1167/15.12.824

Towards an interactive probe for material studies.
Zhang, F., de Ridder, H., & Pont, S. (2014, Poster).
In *Proceedings Experiencing light 2014: international conference on the effects of light on wellbeing, Eindhoven, The Netherlands, 10-11 November 2014* (p. 119).