

# Ryosuke Tanaka

Postdoctoral Researcher, Institute for Neuroscience, Technical University of Munich

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*Date of birth:* June 23, 1992

## EDUCATION

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- 09/2017 - 05/2022 **Yale University**, New Haven, CT, USA  
PhD Student, Interdepartmental Neuroscience Program
- 04/2015 - 03/2017 **The University of Tokyo**, Tokyo, Japan  
MSc, Graduate School of Arts and Sciences  
Major: Psychology and Neuroscience  
Sub-major: The Science Interpreter Training Program
- 04/2011 - 03/2015 **The University of Tokyo**, Tokyo, Japan  
BSc, College of Arts and Sciences (GPA: 4.0/4.0)  
Major: Psychology and Neuroscience

## EDUCATION IN OTHER INSTITUTIONS

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- 09/2014 - 01/2015 Courses in Psychology and Neuroscience, Harvard Extension School, Cambridge, MA, USA

## RESEARCH EXPERIENCE

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- 09/2022 - Present **Technicail University of Munich**  
**Portugues Lab**, Institute for Neuroscience  
Postdoctoral Researcher  
Adviser: Dr. Ruben Portugues  
Research Topic: Functions and mechanisms of heading direction circuitry in larval zebrafish
- 08/2017 - 12/2017, 06/2018 - 05/2022 **Yale University**  
**Clark lab**, Department of Molecular, Cellular, Developmental Biology  
PhD Student  
Adviser: Dr. Damon A. Clark  
Putative Thesis Title: Algorithm and Mechanisms for Visual Motion Source Discrimination in *Drosophila*

- 01/2018 - 05/2018 **Yale University**  
**Jeanne lab**, Department of Neuroscience  
 Rotation Student  
 Adviser: Dr. James M. Jeanne  
 Research Topic: Circuit mechanisms for olfactory sensation in fruitfly *Drosophila*
- 04/2017 - 07/2017 **RIKEN Brain Science Institute**  
**Kazama Lab**, Circuit Mechanisms of Sensory Perception  
 Part-time Research Assistant  
 Advisor: Dr. Hokto Kazama  
 Research Topic: Visual information processing in fruit fly *Drosophila melanogaster*
- 09/2015 - 03/2017 **The University of Tokyo**  
**The Science Interpreter Training Program**  
 Graduate Student (Sub-major)  
 Advisor: Dr. Osamu Sakura  
 Research Topic: Motivation of Scientists
- 09/2013 - 03/2017 **The University of Tokyo**  
**Yotsumoto Lab**, Vision Science and Cognitive Neuroscience  
 Undergraduate Researcher / Graduate Student  
 Advisor: Dr. Yuko Yotsumoto  
 Research Topic: Neural correlates of human motion perception, psychological basis of time perception

## **TEACHING EXPERIENCE**

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- 09/2020 - 12/2020 Teaching Fellow: Laboratory for Neurobiology (Yale)  
 Assisting undergraduates majoring in neuroscience perform neurobiology experiments.
- 01/2019 - 06/2019 Teaching Fellow: Research Methods in Cognitive Neuroscience (Yale)  
 Assisting undergraduates majoring in psychology perform neurobiology experiments.
- 04/2015 - 03/2017 Teaching Assistant: Active Learning of English for Science Student Program for Undergraduate students (UTokyo)  
 Assisting freshman students to improve their in-class simple research projects on which they write a paper in English
- 04/2016 - 07/2016 Teaching Assistant: Freshman Seminar for Humanities Students on Brain Sciences (UTokyo)  
 Gave an introductory lecture on the process of scientific research.  
 Conducted an in-class fMRI experiment and data analysis.
- 04/2015 - 07/2015 Teaching Assistant: Psychology I for Undergraduate students (UTokyo)

Assisted preparing course materials and answered questions from students.

## AWARDS AND SCHOLARSHIPS

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03/2024-02/2027	HFSP Long Term Fellowship
03/2023-02/2024	EMBO Postdoctoral Fellowship
09/2017-08/2019	Gruber Fellowship \$7,000 of stipend supplement and \$2,500 of research budget
09/2017-08/2022	Takenaka Overseas Scholarship Covers tuition up to 2,500,000JPY per year and stipend up to 2,000,000JPY per year for five years.
11/2016	Hot topics, Society for Neuroscience 46th Annual Meeting
10/2016	8th Illusion Contest Award, The Japanese Psychonomic Society
03/2015	National First Highschool Memorial Award for Academic Excellence
11/2015	7th Illusion Contest Award, The Japanese Psychonomic Society
11/2014	6th Illusion Contest Award, The Japanese Psychonomic Society
09/2014 - 01/2015	Leap for Tomorrow Study Abroad Initiative, Ministry of Education, Culture, Sports, Science and Technology, Japan

## PUBLICATIONS

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Mano, O., Choi, M., Tanaka, R., Creamer M. S., Matos, N. C. B., Shomar, J., Badwan, B. A., Clandinin T. R., & Clark, D. A. (2023) Long timescale anti-directional rotation in *Drosophila* optomotor behavior, *eLife*

Tanaka, R., Zhou, B., Agrochao, M., Badwan, B. A., Au, B., Matos, N. C. B., & Clark, D. A. (2023) *Drosophila* integrates visual evidence and counterevidence in self motion estimation, *Curr. Biol.*

Tanaka, R. & Clark, D. A. (2022) Neural mechanisms to exploit positional geometry for collision avoidance, *Curr. Biol.*

Tanaka, R. & Clark, D. A. (2022) Identifying inputs to visual projection neurons in *Drosophila* lobula by analyzing connectomic data, *eNeuro*.

Agrochao, M.\*, Tanaka, R.\*, Salazar-Gatzimas, E., Clark, D. A. (2020) Mechanism for analogous illusory motion perception in flies and humans, *PNAS*. (\* Equal contributions.)

Tanaka, R. & Clark, D. A. (2020) Object-Displacement-Sensitive Visual Neurons Drive Freezing in *Drosophila*, *Curr. Biol.*

Creamer, M. S., Mano, O., Tanaka, R., Clark, D. A. (2019) A flexible geometry for panoramic visual and optogenetic stimulation during behavior and physiology, *J. Neurosci. Meth.*

Tanaka, R. & Yotsumoto, Y. (2017) Passage of time judgments is relative to temporal expectation. *Front. Psychol.*

Tanaka, R. & Yotsumoto, Y. (2016) Networks extending across dorsal and ventral visual pathways correlate with trajectory perception. *Journal of Vision*

## **PRESENTATIONS**

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Tanaka, R., Zhou, B., Agrochao, M., Badwan, B., Au, B., Matos, N. C. B. & Clark, D. A. (2022) *Drosophila* detects negative visual evidence against self-motion. COSYNE 2023 (Poster). Montreal, Canada. 03/2023

Tanaka, R. & Clark, D. A. (2022) Neural mechanisms for collision avoidance exploiting positional geometry. COSYNE 2022 (Poster). Lisbon, Portugal. 02/2022

Tanaka, R. & Clark, D. A. (2020) Visual Object Detection in *Drosophila*. Janelia Mechanistic Cognitive Neuroscience Junior Scientist Workshop (Recorded Talk). Online. 11/2020

Tanaka, R. & Clark, D. A. (2020) A *Drosophila* object detector drives stopping with a displacement sensitive algorithm. CSHL Neural Circuit Meeting. Online. 03/2020

Agrochao, M., Tanaka, R., Clark, D. A., Salazar-Gatzimas, E. (2020) Neural mechanism for illusory motion perception from stationary patterns. COSYNE 2020 (Talk). Denver, CO, USA. 03/2020

Tanaka, R. & Clark, D. A. (2020) *Drosophila* small object detectors trigger stopping with a novel, displacement-sensitive algorithm. COSYNE 2020 (Poster). Denver, CO, USA. 03/2020

Tanaka, R., Horikawa, R., Ogata, T. & Yotsumoto, Y. (2016) Altered Brain Networks in Congenital Adrenal Hyperplasia Revealed Using Multimodal MRI. Society for Neuroscience, 46th Annual Meeting (Poster). San Diego, CA, USA. 11/2016

Tanaka, R. & Yotsumoto, Y. (2016) Passage of Time Judgment Depends on Temporal Anticipation. The Japanese Psychonomic Society, 35th Annual Meeting (Poster). Tokyo Japan 10/2016

Tanaka, R. & Yotsumoto, Y. (2015) Neural Activity in the Ventral Visual Stream which Correlates with Motion Trajectory Perception. The Vision Society of Japan (Talk). Tokyo Japan 07/2015

Tanaka, R. & Yotsumoto, Y. (2015) Contribution of the ventral visual pathway to Perception of the Wriggling Motion Trajectory Illusion: an fMRI study. Vision Sciences Society, 15th Annual Meeting (Poster). St Pete Beach FL USA. 05/2015

## PROFESSIONAL SKILLS

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Basic genetics, behavioral experiments, two-photon calcium imaging in fruitfly *Drosophila melanogaster*.

Programming experience in Matlab (~8 years) and python (~2 years).

Competency in designing visual stimuli for neuroscience experiments.

Basic skills in electronics.

Experimental design, data acquisition, and data analysis in human fMRI and psychophysics experiments.

## OTHER ACTIVITIES

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10/2016 - 11/2016 Contributor for Asahi Student Newspaper  
Contributed a short article series about scientific research and career development.