Dimokratis Karamanlis

Curriculum vitae

Waldweg 33
37073 Göttingen
Germany
✉ *dimokratis.karamanlis@med.uni-goettingen.de*
dimokaramanlis.github.io
dimoskaram
dimokaramanlis

Current position

2022– **Postdoctoral researcher**,
AG Gollisch, Department of Ophthalmology, University Medical Center Göttingen, Göttingen

Education

2017–2022 **PhD in Neuroscience**,
International Max Planck Research School for Neurosciences, Göttingen
Grade: *summa cum laude*
Thesis: How nonlinear processing shapes natural stimulus encoding in the retina
Supervisor: Tim Gollisch

2015–2017 **MSc in Neuroscience**,
International Max Planck Research School for Neurosciences, Göttingen
Grade: 1.1 (1.0 down to 5.0)
Thesis: Spatial integration in mouse retinal ganglion cells
Supervisor: Tim Gollisch

2009–2015 **Doctor of Medicine**,
School of Medicine, Aristotle University of Thessaloniki, Thessaloniki
Grade: 8.11/10

Research experience

2022 **CAJAL Advanced Neuroscience Training**, *Bordeaux School of Neuroscience*
Neural circuit basis of computation and behaviour
Project 1: Silicon-probe electrophysiology and optogenetics in freely moving animals.
Project 2: Two-photon calcium imaging in awake head-fixed mice.
Supervisors: Lisa Roux (P1), Gabrielle Girardeau (P1), Naoya Takahashi (P2)

2016 **Rotation project**, *Max Planck Institute for Dynamics and Self-Organization*
Self-organized sub-criticality: emergence via homeostatic plasticity and function in stimulus representation
Supervisor: Viola Priesemann

2011–2013 **Research assistant**, *Laboratory of Physiology*, School of Medicine, Aristotle University of Thessaloniki
Electrophysiological recordings (electrocardiogram, compound action potential) in rats
Supervisor: Efstratios Kosmidis

2012 **Research assistant**, *Lab of Medical Informatics*, School of Medicine, Aristotle University of Thessaloniki
Personal health records in medical education
Supervisor: Panagiotis Bamidis

2011–2012 **Research assistant**, *Informatics Systems and Applications Group*, School of Mechanical Engineering, Aristotle University of Thessaloniki
Participatory sensing for quality of life information services
Supervisors: Dimitris Voukantsis, Kostas Karatzas

Publications

in press Retinal encoding of natural scenes.
Karamanlis D, Schreyer HM & Gollisch T.
Annual Review of Vision Science.

2022 Simple model for encoding natural images by retinal ganglion cells with nonlinear spatial integration.
Jian K Liu, **Karamanlis D** & Gollisch T. *PLoS Computational Biology* 18(3):e1009925.

2021 Nonlinear Spatial Integration Underlies the Diversity of Retinal Ganglion Cell Responses to Natural Images.
Karamanlis D & Gollisch T. *Journal of Neuroscience* 41(15):3479-3498.

2012 Personal health records in the preclinical medical curriculum: modeling student responses in a simple educational environment utilizing Google Health.
Karamanlis D, Tzitzis P, Bratsas C & Bamidis P. *BMC Medical Education* 12:88.

Talks

2019 Nonlinearities in spatial input integration underlie the diversity of mouse retinal responses to natural stimuli (*invited*).
Rank Prize Funds Symposium (Retinal Processing of Natural Signals). Grasmere.

2019 Natural stimuli reveal a spectrum of spatial encoding across the output channels of the retina (*contributed*).
13th Göttingen Meeting of the German Neuroscience Society. Göttingen.

Conference abstracts

2022 Identifying the nonlinear structure of receptive fields in the mammalian retina.
Karamanlis D & Gollisch T. *COSYNE 2022*. Lisbon.

2021 Mapping the nonlinear spatial receptive field of diverse retinal ganglion cell types.
Karamanlis D & Gollisch T. *Retinal Circuits Symposium*. Online format.

2019 Nonlinearities in spatial input integration underlie the diversity of mouse retinal responses to natural stimuli.
Karamanlis D & Gollisch T. *European Retina Meeting 2019*. Helsinki.

2018 Natural stimuli reveal a spectrum of spatial encoding in the retina.
Karamanlis D & Gollisch T. *Bernstein Conference 2018*. Berlin.

2017 Spatial integration profiles of mouse retinal ganglion cells.
Karamanlis D & Gollisch T. *European Retina Meeting 2017*. Paris.

2017 Analyzing spatial integration in the mouse retina.
Karamanlis D & Gollisch T. *12th Göttingen Meeting of the German Neuroscience Society*. Göttingen.

Honors and awards

2021 **Best poster award**,
Retinal Circuits Symposium

2019 **Nomination for the Lindau Nobel Laureate Meeting**,
Göttingen Graduate Center for Neurosciences, Biophysics, and Molecular Biosciences

2009 **Bronze medal (National Mathematical Olympiad)**,
Hellenic Mathematical Society

Scholarships and grants

2018–2020 **PhD fellowship**,
Boehringer Ingelheim Fonds

2015–2017 **Study scholarship for graduates of all disciplines**,
German Academic Exchange Service (DAAD)

Teaching

2019 **Methods course for PhD students**,
Göttingen Graduate Center for Neurosciences, Biophysics, and Molecular Biosciences
Introduction to spike-train analysis with Python

2019 **Tutorial for Master's students**,
International Max Planck Research School for Neurosciences
Vision (retina, lateral geniculate nucleus, primary visual cortex)

2017–2018 **Supervision of Master's students**,
International Max Planck Research School for Neurosciences
Two-month projects on analysis of retinal data

2010 **Tutorial for medical students**,
Lab of Medical Informatics, Aristotle University of Thessaloniki
Personal Health Record module of Medical Informatics I course

Selected conferences and workshops

2019 **69th Lindau Nobel Laureate Meeting (Physics)**, *Lindau*

2014 **Analysis and Models in Neurophysiology**, *Freiburg*

2013 **11th Summer Course on Computational Neuroscience**, *Göttingen*

On-line coursework

mathematics logic, calculus, linear algebra, statistics

physics electricity and magnetism, electrical circuits, statistical thermodynamics

comp sci artificial intelligence, machine learning, deep learning

statements of accomplishment are available on request

Computer languages

programming MATLAB, Python, C++

markup HTML, CSS, LaTeX

Other skills

animals handling of mice and rats (FELASA certification)

ephys multielectrode-array recordings (*Multi Channel Systems*, *3Brain*)

spike-sorting *Kilosort*, manual curation with *phy*