

Dimokratis Karamanlis

Curriculum vitae

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📄 [dimokaramanlis.github.io](https://github.com/dimokaramanlis)

🐦 [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
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

- 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*