

# CARSEN STRINGER

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📍 Ashburn, VA

🌐 scholar profile

🔄 carsen-stringer

🐦 @computingnature

## CURRENT POSITION

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2020- | **HHMI Janelia Research Campus**  
Group Leader

## POSTDOCTORAL EXPERIENCE

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2018-2020 | **HHMI Janelia Research Campus**  
Visual processing and behavioral representations in cortex  
Advisor: Marius Pachitariu & Karel Svoboda

## EDUCATION

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2013-2018 | **PhD in Computational Neuroscience**  
Gatsby Computational Neuroscience Unit, UCL, London  
[Discovering structure in multi-neuron recordings through network modelling](#)  
Advisor: Kenneth D. Harris

2009-2013 | **BS in Applied Mathematics and Physics**  
University of Pittsburgh – GPA: 3.93/4.00  
Advisor: Jonathan Rubin

## PUBLICATIONS

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| 2021 | <b>Stringer C</b> , Michaelos M, Tsybouski, Lindo S, Pachitariu M<br><a href="#">High precision coding in visual cortex</a><br><b>Stringer C</b> , Wang T, Michaelos M, Pachitariu M<br><a href="#">Cellpose: a generalist algorithm for cellular segmentation</a>   | <i>Cell</i><br><i>Nature Methods</i>  |
| 2020 | van Viegen T, ..., <b>Stringer C</b> , ..., Peters MAK<br><a href="#">Neuromatch Academy: Teaching computational neuroscience with global accessibility</a>  | <i>Trends in Cognitive Sciences</i>   |
| 2019 | <b>Stringer C</b> , Michaelos M, Pachitariu M<br><a href="#">High precision coding in mouse visual cortex</a><br><b>Stringer C*</b> , Pachitariu M*, Steinmetz N, Carandini M, and Harris KD<br><a href="#">High-dimensional geometry of population responses in visual cortex</a><br><b>Stringer C*</b> , Pachitariu M*, Steinmetz N, Reddy CB, Carandini M, and Harris KD<br><a href="#">Spontaneous behaviors drive multidimensional, brainwide activity</a><br><b>Stringer C</b> and Pachitariu M<br><a href="#">Computational processing of neural recordings from calcium imaging data</a> | <i>bioRxiv</i><br><i>Nature</i><br><i>Science</i><br><i>Current opinion in neurobiology</i> |
| 2018 | Pachitariu M, <b>Stringer C</b> , and Harris KD<br><a href="#">Robustness of spike deconvolution for neuronal calcium imaging</a>  | <i>Journal of Neuroscience</i>  |
| 2017 | Pachitariu M, <b>Stringer C</b> , Dipoppa M, ... , Harris KD<br><a href="#">Suite2p: beyond 10,000 neurons with standard two-photon microscopy</a>   | <i>bioRxiv</i>  |
| 2016 | <b>Stringer C*</b> , Pachitariu M*, Steinmetz N, ... , Lesica NA<br><a href="#">Inhibitory control of correlated intrinsic variability in cortical networks</a>  | <i>eLife</i>  |
| 2014 | Suarez E, Lettieri S, Zwier MC, <b>Stringer C</b> , ..., Zuckerman, DM<br><a href="#">Simultaneous computation of dynamical and equilibrium information using a weighted ensemble of trajectories</a>  | <i>Journal of Chem Theory and Computation</i>   |

## DATASETS

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2021	<b>Stringer C</b> , Michaelos M, Pachitariu M 70,000 labelled cells used to train Cellpose	<i>self-hosted</i>
2019	<b>Stringer C</b> , Michaelos M, Pachitariu M Recordings of ~20,000 neurons from V1 in response to oriented stimuli	<i>figshare</i>
	Steinmetz N, Pachitariu M, <b>Stringer C</b> , Carandini M, and Harris KD Eight-probe Neuropixels recordings during spontaneous behaviors	<i>figshare</i>
2018	<b>Stringer C*</b> , Pachitariu M*, Carandini M, and Harris KD Recordings of 10,000 neurons in visual cortex in response to 2,800 natural images	<i>figshare</i>
	<b>Stringer C*</b> , Pachitariu M*, Reddy CB, Carandini M, and Harris KD Recordings of 10,000 neurons in visual cortex during spontaneous behaviors	<i>figshare</i>
	Pachitariu M, <b>Stringer C</b> , and Harris KD Recordings of 10k neurons in V1 during drifting gratings	<i>figshare</i>

## SOFTWARE DEVELOPMENT

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<b>cellpose</b>	Cellular segmentation software	<i>python</i>
<b>suite2p</b>	Calcium imaging processing software	<i>python &amp; matlab</i>
<b>rastermap</b>	Non-linear embedding algorithm for high-dimensional data	<i>python &amp; matlab</i>
<b>facemap</b>	Behavioral analysis software	<i>python &amp; matlab</i>

## INVITED/ACCEPTED TALKS

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2021: UIUC, Allen Institute workshop, Bernstein Conference, UC Irvine, UC Riverside, MIT, Neural Interface Conference, Columbia University, NYU

2020: Hebrew University, Queens University, Duke University, University of Melbourne, Barrels symposium, SAIDL, Neuromath Seminar, Nilearn ML Day, Oxford CortexClub, Cognitive Neuroscience Society meeting, Yale symposium (keynote)

2019: Janelia workshop, University of Oregon, Columbia University workshop, SAND Pitt/CMU conference

2018: Cosyne workshop talk

2016: Cosyne main meeting talk

2015: SfN Nanosymposium, NCCD, Gatsby Tri-Center meeting at Columbia University

## WORKSHOP TEACHING

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2019	Learning to use suite2p and kilosort2 (co-instructor)	<i>Janelia</i>
	Neural Data Science (co-instructor)	<i>CSHL</i>
	Imaging Structure & Function in the Nervous System (lecturer)	<i>CSHL</i>
2018	Imaging Structure & Function in the Nervous System (lecturer)	<i>CSHL</i>

## TEACHING

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2021-	On board of directors	<i>Neuromatch Academy</i>
2020	Deep Learning 1 (organizer/lecturer) + TA organizer	<i>Neuromatch Academy</i>
2019	Mathematical methods for neuroscience and ML (co-organizer)	<i>Janelia</i>
2018	Machine Learning: Dimensionality reduction	<i>Janelia</i>
2014	Theoretical Neuroscience TA	<i>Gatsby</i>