

# Marino Pagan Curriculum Vitae

Postdoctoral Research Associate, Princeton University

[mpagan@princeton.edu](mailto:mpagan@princeton.edu)

## Education and Training

- 2003-2006 **University of Pisa**, Pisa, Italy  
Laurea (B.S.) in Computer Engineering (110/110 cum laude)  
Advisors: Dr. Bruno Codenotti, Dr. Massimo Pappalardo  
Thesis title: *An analysis of the Lemke-Howson algorithm for the computation of Nash equilibria in bimatrix games*
- 2006-2009 **University of Pisa**, Pisa, Italy  
Laurea Specialistica (M.S.) in Control Engineering (110/110 cum laude)  
Advisors: Dr. Alberto Landi, Dr. Andrea Caiti, Dr. Davide Zoccolan, Dr. James DiCarlo  
Thesis title: *Study of a biologically inspired model for visual object recognition*
- 2003-2009 **Scuola Superiore Sant'Anna**, Pisa, Italy  
Diploma in Engineering (100/100 cum laude)
- 2009-2014 **University of Pennsylvania**, Philadelphia, PA  
Ph.D. in Neuroscience  
Advisor: Dr. Nicole Rust  
Dissertation title: *The neural mechanisms underlying visual target search*
- 2015-present **Princeton University**, Princeton, NJ  
Postdoctoral research in the laboratory of Dr. Carlos Brody

## Grants

- 2016-2019 Simons Collaboration on the Global Brain (SCGB) Postdoctoral Fellowship  
"Neural mechanisms underlying flexible decision-making"
- 2021-2022 NIMH R21 Grant (Carlos Brody, Marino Pagan)  
"Experimental platform to investigate the neural mechanisms underlying flexible decision-making"
- 2021 Simons Foundation Autism Research Initiative (SFARI) Bridge to Independence Award  
"High-throughput dissection of the neural mechanisms underlying cognitive inflexibility in autism"  
\$495,000 over three years, activated upon assumption of a tenure-track research professorship

## Honors and Awards

- 2003-2009 Full Scholarship (room and board) for the full duration of undergraduate studies as a winner of nationwide competition (1<sup>st</sup> out of 312 applicants), Scuola Superiore Sant'Anna
- 2012 Best oral presentation at BGSA Symposium, University of Pennsylvania
- 2012 Jameson-Hurvich Travel Award, University of Pennsylvania
- 2012 Admission to Computational Vision course, Cold Spring Harbor Laboratory
- 2013 Presenter's Travel Grant, CoSyNe
- 2020 Selected Speaker for NeuroLaunchpad Seminar Series

## Teaching experience

- 2011 Teaching Assistant for *Cellular Neurobiology* (BBB251), University of Pennsylvania
- 2016-2021 Mentorship of a rotation student (Diksha Gupta) and of undergraduate students (Vincent Tang, Mitashree Das, Hifsa Chaudhry) in Dr. Carlos Brody's laboratory at Princeton University

## Publications

Codenotti, B., De Rossi, S.M., **Pagan, M.** (2008). An experimental analysis of Lemke-Howson algorithm. *arXiv:0811.3247*

Baldassi, C.\*, Alemi-Neissi, A.\*, **Pagan, M.\***, DiCarlo, J.J., Zecchina, R., Zoccolan, D. (2013). Shape similarity, better than semantic membership, accounts for the structure of visual object representations in a population of monkey inferotemporal neurons. *PLoS Computational Biology*. 9 (8), e1003167 (PMCID3738466)  
\*co-first author

**Pagan, M.**, Urban, L.S., Wohl, M.P., Rust, N.C. (2013). Signals in inferotemporal and perirhinal cortex suggest an untangling of visual target information. *Nature Neuroscience*. 16 (8), 1132-1139 (PMCID3725208)

**Pagan, M.**, Rust, N.C. (2014). Quantifying the signals contained in heterogeneous neural responses and determining their relationships with task performance. *Journal of Neurophysiology*. 112 (6), 1584-1598 (PMCID4137243)

**Pagan, M.**, Rust N.C. (2014). Dynamic target match signals in perirhinal cortex can be explained by instantaneous computations that act on dynamic input from inferotemporal cortex, *Journal of Neuroscience*. 34 (33), 11067-11084 (PMCID4131017)

**Pagan, M.**, Simoncelli E.P., Rust N.C. (2016). Neural Quadratic Discriminant Analysis: Nonlinear Decoding with V1-Like Computation, *Neural Computation*. 28 (11), 2291-2319 (PMCID6395528)

Duan, C.A.\*, **Pagan, M.\***, Piet, A.T.\*, Kopec, C.D., Akrami, A., Riordan, A.J., Erlich, J.C., Brody, C.D. (2021) Collicular circuits for flexible sensorimotor routing, *Nature Neuroscience*. 24 (8), 1110-1120 (PMCID34083787)  
\*co-first author

## Manuscripts in preparation

**Pagan, M.**, Tang, V., Aoi, M.C., Sussillo, D., Mante, V., Pillow, J.W., Brody, C.D. Neural sources of individual variability in cognitive behavior

## Selected meetings and presentations

- 2011 From luminance to semantics: how images of natural objects are represented in IT cortex, *CoSyNe*
- 2012 The neural mechanisms involved in finding specific objects and switching between targets, *CoSyNe*
- 2013 Visual target signals are computed via a dynamic “and-like” mechanism in IT and PRh cortex, *CoSyNe*
- 2014 Maximum Variance Differentiation (MVD) explains the transformation from IT to PRh cortex, *CoSyNe*
- 2016 A collicular mechanism for flexible sensorimotor gating during task switching, *CoSyNe*
- 2016 Neural mechanisms underlying flexible decision-making, *SCGB Annual Meeting* (invited talk)
- 2017 Flexible decision-making in rats, *CoSyNe*
- 2018 Flexible feature selection for decision-making in rats, *SCGB Annual Meeting*
- 2019 Representations and causal contributions of frontal cortex during flexible decision-making, *CoSyNe*
- 2019 Neural mechanisms underlying flexible decision-making, *PNI In-house seminar* (invited talk)
- 2019 Representations and causal contributions of frontal cortex during context-dependent evidence accumulation, *SCGB Annual Meeting*
- 2020 Heterogeneous recurrent mechanisms underlying context-dependent computation in rats, *CoSyNe*
- 2020 Individual variability in the neural mechanisms underlying context-dependent decision-making, *PNI In-house seminar* (invited talk)
- 2020 Individual variability in the neural mechanisms underlying context-dependent decision-making, *NeuroLaunchpad Seminar series* (invited talk)
- 2020 Individual variability in the neural mechanisms underlying context-dependent decision-making, *HHMI Cognitive and Systems Neuroscience meeting*
- 2021 Individual variability of neural mechanisms underlying flexible decision-making, *CoSyNe*
- 2021 High-Throughput Electrophysiology and Optogenetics in Freely-Moving Rats Performing Cognitive Tasks, *IEEE NER 2021*