

DANIEL (DJ) STROUSE
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Born: Nov 24, 1987
 in Elgin, IL
 Citizenship: USA
 Hometown: Newark, DE
 Last updated: Jan 20, 2016

Education

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| 9/2017 | PhD in Physics
Princeton University, Princeton, NJ
<i>Advisor: William Bialek</i> |
| 9/2012 | Master's of Philosophy (MPhil) in Engineering
University of Cambridge, Cambridge, UK
<i>Advisor: Máté Lengyel</i> |
| 5/2011 | B.A. Physics (<i>magna cum laude</i>), B.S. Mathematics (<i>magna cum laude</i>)
University of Southern California (USC), Los Angeles, CA |

Research Interests

- Design principles of biological systems
- Inference and prediction in biological systems
- Quantitative approaches to cultural phenomena

Grants, Honors, & Awards

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| 2013-2017 | Hertz Foundation Fellowship |
| 2012-2016 | DoE Computational Sciences Graduate Fellowship (<i>awarded in 2011</i>) |
| 2011-2012 | Churchill Scholarship |
| 2011 | Hertz Foundation Fellowship Finalist |
| 2011 | NSF Graduate Research Fellowship (<i>declined for DoE CSGF</i>) |
| 2011 | USC Order of the Laurel and the Palm (<i>highest honor bestowed upon graduating seniors</i>) |

Journal Publications & Conference Proceedings

- DJ Strouse** & D. Schwab. *The deterministic information bottleneck.* (in preparation)
- X. Wu, **DJ Strouse**, & B. Mel. *Optimizing online learning capacity in a biologically-inspired neural network.* (in preparation)
- AM Childs & **DJ Strouse**. *Levinson's theorem for graphs.* Journal of Mathematical Physics. Aug 2011. [arxiv] [journal]

Posters

- DJ Strouse** & David Schwab. *Compression and regularization with the information bottleneck.* APS March Meeting. Baltimore, MD. March 2016.
- DJ Strouse** & David Schwab. *The Deterministic Information Bottleneck.* APS March Meeting. San Antonio, TX. March 2015.
- DJ Strouse** & David Schwab. *The Deterministic Information Bottleneck: Optimizing Memory for Prediction.* Society for Neuroscience (SfN). Washington, DC. November 2014. [link]
- DJ Strouse**, Balazs Ujfalussy, & Mate Lengyel. *Dendritic subunits: the crucial role of input statistics and a lack of two-layer behavior.* Computational and Systems Neuroscience (Cosyne). Salt Lake City, UT. February 2013.

DJ Strouse, Jakob Macke, Roman Shusterman, Dima Rinberg, & Elad Schneidman. *Behaviorally-locked structure in a sensory neural code*. Sensory Coding & Natural Environment (SCNE). Vienna, Austria. September 2012.

DJ Strouse & Mate Lengyel. *Hierarchical generalized linear models of dendritic integration and somatic membrane potential*. Computational and Systems Neuroscience (Cosyne). Salt Lake City, UT. February 2012.

Bartlett Mel, Xundong Wu, & **DJ Strouse**. *Optimizing online learning capacity in a biologically-inspired memory structure*. Computational and Systems Neuroscience (Cosyne). Salt Lake City, UT. February 2012.

Xundong Wu, **DJ Strouse**, & Bartlett Mel. *Optimizing online learning capacity in a biologically-inspired neural network*. Society for Neuroscience (SfN). Washington, DC. November 2011.

Xundong Wu, **DJ Strouse**, & Bartlett Mel. *Optimizing online learning capacity in a biologically-inspired neural network*. Annual Joint Symposium On Neural Computation. San Diego, CA. June 2011.

DJ Strouse. *Reliable brains from unreliable neurons – the search for synfire chains in the brain*. Stanford Amgen Scholars Symposium. Palo Alto, CA. August 2010.

Talks

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| 3/2016 | APS March Meeting (Baltimore, MD)
<i>Title: Compression and regularization with the information bottleneck</i> |
| 1/2016 | Physics-Informed Machine Learning (Santa Fe, NM)
<i>Title: The deterministic information bottleneck</i> |
| 8/2012 | Advanced Course in Computational Neuroscience Symposium (Będlewo, Poland)
<i>Title: Optimal dynamics for fast network responses</i> |
| 4/2012 | Microsoft Research Cambridge, Machine Learning Group (Cambridge, UK)
<i>Title: The Information Bottleneck Method</i> |
| 8/2011 | Methods in Computational Neuroscience Symposium (MBL, Woods Hole, MA)
<i>Title: Sniff-modulations of the olfactory bulb vocabulary</i> |
| 8/2010 | Stanford Amgen Scholars Symposium (Palo Alto, CA)
<i>Title: Reliable brains from unreliable neurons – the search for synfire chains in the brain</i> |
| 7/2010 | Open Science Summit (University of California, Berkeley, CA) [link]
<i>Title: Open science is more than open publishing – meet CoLab</i> |
| 6/2010 | Institute for Quantum Computing Colloquium (Waterloo, Ontario, Canada) [link]
<i>Title: A Levinson's theorem for scattering on graphs</i> |

Professional

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| 10/2015 | Organizer, Hertz Foundation East Coast Fellows Retreat |
| 2/2015 | Co-Founder, <i>Vokl</i> , a voice-based forum allowing users to host, participate in, and listen to discussions around specific topics |
| 3/2013 | Organizer, Computational and Systems Neuroscience (Cosyne) workshop on <i>Dendritic computation in neural circuits</i> |
| 12/2009-4/2012 | Co-Founder, <i>CoLab</i> , an online set of tools designed to promote open and massively collaborative science |

Summer Schools

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| 8/2013 | Computational and Cognitive Neuroscience Summer School (CCNSS)
Cold Spring Harbor Asia, Beijing, China |
| 8/2012 | Advanced Course in Computational Neuroscience (ACCN)
FENS-IBRO European Neuroscience School Programme, Będlewo, Poland |

8/2011 Methods in Computational Neuroscience (MCN) summer course
Marine Biological Laboratory (MBL), Woods Hole, MA

Other Skills & Information

COMP. LANGUAGES Matlab, R, Python, Mathematica

HUMAN LANGUAGES English (fluent), Mandarin (conversational), Spanish (conversational)

HOBBIES running, traveling, hiking, web/mobile app development