

Education

PhD, Physics	Princeton University	2012 – 2017
<ul style="list-style-type: none"> • <i>Research</i>: maximally informative clustering with the information bottleneck • <i>Advisor</i>: William Bialek 		
MPhil, Information Engineering	University of Cambridge	2011 – 2012
<ul style="list-style-type: none"> • <i>Research</i>: hierarchical linear-nonlinear cascade models of dendritic integration of synaptic inputs • <i>Advisor</i>: Máté Lengyel 		
BA, Physics and BS, Math	University of Southern California	2006 – 2011
<ul style="list-style-type: none"> • <i>Research</i>: quantum algorithms, quantum information theory, the role of dendritic computation in recognition memory • <i>Advisors</i>: Bartlett Mel, Paolo Zanardi, Andrew Childs 		

Work Experience

Machine Learning Intern	Spotify	Summer 2016 – present
<ul style="list-style-type: none"> • Analyzed ad campaign AB tests using Bayesian hypothesis testing and presented results to key stakeholders • Developed probabilistic models of musical taste with applications in recommendations, fraud detection, and ad targeting • Applying PhD research on maximally informative clustering to segment users based on musical taste and other behavior 		
Data Science Intern	Zynga	Summer 2015
<ul style="list-style-type: none"> • Specialized in classification of imbalanced datasets • Surveyed and tested a wide range of resampling and cost-sensitive methods on a variety of datasets 		

Awards and Recognition

- Hertz Fellowship (2012-present)
- Churchill Scholarship (2011-2012)
- Department of Energy Computational Sciences Graduate Fellowship (CSGF) (2012-2016)
- USC Order of the Laurel and the Palm (2011)
- USC Presidential Scholarship (2006-2011)

Skills and Languages

- *Programming languages*: Python, R, Matlab, SQL
- *Human languages*: English (fluent), Spanish (conversational), Mandarin Chinese (conversational)

Publications

- **DJ Strouse** & David Schwab. *The deterministic information bottleneck*. Neural Computation. (in review)
- Xundong Wu, **DJ Strouse**, Gabriel Mel, & Bartlett Mel. *Memory Capacity of a Dendrite-Based Online Recognition Memory*. Neuron. (submitted)
- **DJ Strouse** & David Schwab. *The deterministic information bottleneck*. Uncertainty in Artificial Intelligence (UAI), 2016.
- Andrew Childs & **DJ Strouse**. *Levinson's theorem for graphs*. Journal of Mathematical Physics, 2011.

Presentations**Talks**

- American Physical Society (APS) (Baltimore, MD). *The deterministic information bottleneck*. Mar 2016.
- Physics-Informed Machine Learning (Santa Fe, NM). *The deterministic information bottleneck*. Jan 2016.
- Microsoft Research Cambridge (Cambridge, UK). *The information bottleneck method*. Apr 2012.
- Open Science Summit (Berkeley, CA). *Open science is more than open publishing - meet CoLab*. Jul 2010.
- Institute for Quantum Computing (Waterloo, Ontario). *A Levinson's theorem for scattering on graphs*. Jun 2010.

Posters

- **DJ Strouse** & David Schwab. *The deterministic information bottleneck*. Uncertainty in Artificial Intelligence (UAI). Jersey City, NY. Jun 2016.
- **DJ Strouse** & David Schwab. *The deterministic information bottleneck: optimizing memory for prediction*. Society for Neuroscience (SfN). Washington, DC. Nov 2014.
- **DJ Strouse**, Balazs Ujfalussy, & Máté 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. Feb 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. Sept 2012.
- **DJ Strouse** & Máté Lengyel. *Hierarchical generalized linear models of dendritic integration and somatic membrane potential*. Computational and Systems Neuroscience (Cosyne). Salt Lake City, UT. Feb 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. Feb 2012.
- Xundong Wu, **DJ Strouse**, & Bartlett Mel. *Optimizing online learning capacity in a biologically-inspired neural network*. Society for Neuroscience (SfN). San Diego, CA. Jun 2011.

Professional Service

- Co-Organizer, Hertz Foundation East Coast Fellows Retreat, Oct 2015
- Co-Organizer, Cosyne workshop on *Dendritic computation in neural circuits*, Mar 2013
- Co-Founder, CoLab - an online set of tools to enable open & massively collaborative science, Dec 2009 – Apr 2012

Other Education

- Computational and Cognitive Neuroscience Summer School (CCNSS). Beijing, China. Aug 2013.
- Advanced Course in Computational Neuroscience (ACCN). Bedlewo, Poland. Aug 2012.
- Methods in Computational Neuroscience (MCN). Woods Hole, MA. Aug 2011.