Anastasiya Salova

Google Scholar
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Education

UC Davis, Davis, CA — September 2015 to June 2021 (expected)
Ph.D. candidate in Physics
Passed qualifying exam March 2018, preliminary exam September 2016
GPA 3.80 out of 4.0

Yale University, New Haven, CT — September 2011 to May 2015
BS in Mathematics and Physics

Research Experience

Graduate Student Research Assistant — September 2016- present
UC Davis Physics Department
Advisor: Prof. Raissa D'Souza

- Nonlinear dynamics, symmetry breaking states, and control of collective behavior of nanoelectromechanical oscillators (NEMS) and other limit cycle oscillator networks
- Effect of symmetries in dynamical systems on the Koopman operator and its approximations
- Effective decoupling in networks of linearly coupled limit cycle oscillators

Visitor, IPAM Long Program — September to December 2019
Title: Machine Learning in Physics and the Physics of Learning
Institute for Pure and Applied Mathematics at UCLA

- Attended 5 week-long workshops on various topics
- Participated in working groups (coarse-graining in MD, dynamical systems, ML with constraints, model discovery)

Graduate Student Research Assistant — Spring Quarter 2016
UC Davis Physics Department
Supervisor: Prof. Emilija Pantic

Undergraduate Thesis Research Project — May 2014 to May 2015
Yale University Physics Department
Thesis Advisor: Prof. Daniel McKinsey

Perspectives on Science and Engineering — April to July 2012
Summer Research Yale University Physics Departament
Supervisor: Prof. Jack Sandweiss

Teaching Experience

Teaching Assistant for Honors Physics — Winter Quarter 2021
UC Davis Physics 9HE
Taught the discussion session online, graded midterms and finals, held weekly office hours and exam review sessions.

Teaching Assistant for **Network Theory** — Spring Quarter 2018
(UC Davis ECS/MAE 253)
Held office hours for graduate students of different academic backgrounds, graded homeworks and exams, assisted with group projects.

Teaching Assistant for **General Physics** — September 2015 to December 2016
(UC Davis Phys 7A, 7B, 7C)
Taught the discussion and lab session, graded homeworks and exams, attended weekly TA meetings, held weekly office hours and a final review session.

Scholarships

- UC Davis Physics Travel Award — December 2020
- UC Davis Physics Department Fellowship — Fall 2020
- Andrew Serge Gagarin Scholarship — 2012-2014
- Michele Dufault Endowment Fund for Yale Women in Science Scholarship — 2013-2014
- Perspectives of Science and Engineering (PSE) Summer Research Scholarship — 2012

Conference Presentations

- Annual Conference on Complex Systems, held remotely — December 2020
- Conference on Complex Networks and their Applications, held remotely — December 2020
- NetSci TopoNets satellite, held remotely — September 2020
- Dynamics Days Digital, held remotely — August 2020
- SIAM AN20, held remotely — July 2020
- Dynamics Days, Hartford, CT — January 2020
- IPAM seminar series, Los Angeles, CA — November 2019
- NetSci ISODS satellite meeting, Burlington, VT — May 2019
- NetSci, Burlington, VT — May 2019
- SIAM DS19, Snowbird, UT — May 2019
- Dynamics Days, Evanston, IL — January 2019
- APS Far West, Fullerton, CA — October 2018

Conference Posters

- Dynamics Days, Evanston, IL — January 2019
- Dynamics Days, Denver, CO — January 2018

Publications

Published

- **Salova, A.**, and D'Souza, R. M. (2020). Decoupled synchronized states in networks of linearly coupled limit cycle oscillators. *Physical Review Research*, 2(4), 043261.
- **Salova, A.**, Emenheiser, J., Rupe, A., Crutchfield, J. P., and D'Souza, R. M. (2019). Koopman operator and its approximations for systems with symmetries. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 29(9), 093128.
- Matheny, M. H., Emenheiser, J., Fon, W., Chapman, A., **Salova, A.**, Rohden, M., Li, J., Hudoba de Badyn, M., Posfai, M., Duenas-Osorio, L., Mesbahi, M., Crutchfield, J. P., Cross, M. C., D'Souza, R. M., and Roukes, M. L. (2019). Exotic states in a simple network of nanoelectromechanical oscillators. *Science*, 363(6431), eaav7932.

Preprints

- **Salova, A.**, and D'Souza, R. M. (2021). Cluster synchronization on hypergraphs. *arXiv preprint arXiv:2101.05464*.
- Emenheiser, J., **Salova, A.**, Snyder, J., Crutchfield, J.P., and D'Souza, R.M. (2020). Network and Phase Symmetries Reveal That Amplitude Dynamics Stabilize Decoupled Oscillator Clusters. *arXiv preprint arXiv:2010.09131*.

Summer Schools & Seminar Series

Santa Fe Institute Complexity Summer School — June to July 2018

- Attended lectures and participated in discussions on complex behavior in mathematical, physical, living, and social systems
- Participated in interdisciplinary group research projects (e.g., data-driven approaches to cardiac dynamics)

Understanding and Exploring Network Epidemiology in the Time of Coronavirus (Net-COVID) seminar series — April 2020

- Attended weekly seminars and discussion series
- Participated in a reading group on adaptive networks in epidemiology

Lake Como School "Complex Networks: Theory, Methods and Applications" (6th edition) — cancelled, originally scheduled for May 2020

- Accepted, did not attend due to cancellation

Journal Refereeing

Physical Review E, Nature Communications

Service and Outreach	• Peer mentor, UC Davis Physics mentorship program • Volunteer at 2019 APS Conferences for Undergraduate Women in Physics (CUWiP) at UC Davis • Member of the UC Davis Physics Diversity and Inclusion group
Public Talks	*How stable is the solar system*, Astronomy on Tap in Davis, 2019