

ARASH SAEIDPOUR

Rohani Lab
Odum School of Ecology
140 E. Green St
Athens, GA 30602

 arash.saeidpour@gmail.com
 706 255 4426
 [ArashSaeidpour](#)
 [arash-saeidpour](#)

Professional Experience

Postdoctoral Researcher

Athens, GA

Rohani Lab, Odum School of Ecology,
University of Georgia
Dec 2017 - present

- **Time series anomaly detection:** Developed an LSTM autoencoder model for unsupervised detection of anomalies in the time series of Influenza B cases across US states ([Link](#)).
- **Interpretable machine learning:** Developed a Feed-forward neural network to characterize the association between various socio-economic features obtained from census data and pertussis epidemic time lag across boroughs of London; and used SHapley Additive exPlanations (SHAP) to measure the influence of individual features ([PDF \(under review\)](#)).
- **Reinforcement learning:** Implemented an evolution algorithm to determine the optimal non-pharmaceutical intervention strategy for COVID-19 epidemic, which dynamically adjusts the control intensity given the epidemiological state of the population ([PDF \(under review\)](#)).

R&D Structural Engineer

Tehran, Iran

Rahyab Melal Consulting Engineers
Dec 2011- March 2013

Developed software products for structural design of highway bridges in accordance with standard specifications.

Education

University of Georgia, Athens, GA

PhD, Engineering, July 2017;

Proposed a novel approach for risk assessment of coastal bridges subjected to hurricane hazard by implementing different classification algorithms for prediction of failure of coastal bridges subjected to hurricane wave and surge forces. (funded by Georgia Department of Transportation) ([PDF](#)).

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

MSc, Hydraulic Structures, November 2011;

University of Zanjan, Zanjan, Iran

BSc, Civil Engineering, October 2009;

Select Projects

- Implemented a DP-WGAN to generate a differentially private synthetic dataset from World-line credit card transactions data ([IPython Notebook](#))
- Attention-based Neural Machine Translation ([IPython Notebook](#))
- Sub-word modeling and convolutional networks for NLP tasks ([IPython Notebook](#))
- Hierarchical clustering of Odum School of Ecology faculty based on publication record ([IPython Notebook](#))
- Implementation of word2vec on Stanford Sentiment Treebank (SST) dataset ([IPython Notebook](#))
- Coauthorship graph of Odum School of Ecology faculty ([IPython Notebook](#))
- Neural-network based dependency parser via arc-standard system for transitions ([IPython Notebook](#))

Online Courses and Certificates

- Triplebyte Data Science [Certificate](#) (3% pass rate)
- Deep Learning Specialization by deeplearning.ai on Coursera[[Certificate](#)]:
 - Neural Networks and Deep Learning
 - Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
 - Structuring Machine Learning Projects
 - Convolutional Neural Networks
 - Sequence Models
- Machine Learning by Stanford University on Coursera [[Certificate](#)]
- Python [gold badge](#) on Hackerrank (rank 1st with total score of 2305)
- Natural Language Processing with Deep Learning (Stanford CS224N)
- Problem solving (algorithms and data structures) [gold badge](#) on Hackerrank

Skills and Tools

- Python, SQL, C/C++, CUDA, Matlab, Mathematica, Tcl;
- TensorFlow, PyTorch, Keras, sklearn, Pandas, Matplotlib, Plotly, Dask;
- Jupyter Notebook, HTML, L^AT_EX;
- AWS, Google Cloud, Containerization (Docker);
- Git, Unix/Linux shell scripting ;
- ArcGIS, QGIS, ArcCatalog, Autocad.

Select Publications/ Proceedings

Saeidpour, A., Rohani, P. (2021). "A dynamic control policy to contain COVID-19 epidemic using evolutionary strategy", *Evolution, Medicine, and Public Health* (Under review).

Saeidpour, A., Bansal, S., Rohani, P. (2021). "Dissecting recurrent waves of pertussis across the boroughs of London", *PLOS Computational Biology* (Under review).

Borchering, R. K., Gunning, C. E., Gokhale, D. V., Weedop, K. B., **Saeidpour, A.**, Brett, T. S., Rohani, P. (2021). "Anomalous influenza seasonality in the United States and the emergence of novel influenza B viruses", *Proceedings of the National Academy of Sciences*, 118(5).

Saeidpour, A., Chorzepa, M.G., Christian, J. and Durham, S. "Parameterized fragility assessment of bridges subjected to hurricane events using metamodels and multiple environmental parameters", *Journal of Infrastructure Systems*, 24(4), 2018.

Saeidpour, A., Chorzepa, M.G., Christian, J.K. and Durham, S.A. ."Probabilistic Hurricane Risk Analysis of Coastal Bridges Incorporating Extreme Wave Statistics" *Engineering Structures*, 182, 2019.

Chorzepa, M. G., **Saeidpour, A.**, Christian, J.K. and Durham, S.A., (2016), "Hurricane Vulnerability Of Coastal Bridges Using Multiple Environmental Parameters," *Proc. 10th International Conference on Risk Analysis and Hazard Mitigation*, Crete, Greece.

Saeidpour, A. "Fragility analysis of coastal bridges susceptible to hurricanes incorporating uncertainties in extreme wave parameters by means of wave spectra and enhancement of vulnerability assessment methodologies." PhD diss., University of Georgia, 2017.

Saeidpour, A., Alinia, M.M.and Amani, M. (2011), "Comparison of Postbuckling Prediction Approaches in Curved Panels," *Proc. IABSE-IASS 2011 Symposium*, London, UK.

Alinia, M. M.,**Saeidpour, A.**, Amani, M. ."The shear buckling and postbuckling behavior of laterally pressured curved panels" *engrXiv*, 2019.

**Public
Presentations**

Poster Presentation (2019) "The return's anatomy: dissection of pertussis resurgence in London", *EEID 2019*, Princeton University, Princeton, NJ [[Poster](#)].

Oral Presentation (2018): "Leveraging census data to unlock insights from changing dynamics of pertussis in London", *Joint MIDAS CDC meeting*, Emory University, Atlanta, Georgia.

Oral Presentation (2016) "Multi-Hazard Resilient and Sustainable (or MRS) Bridges – Stronger, Taller, Wider, Smarter? ", *EMI/PMC 2016*, Vanderbilt University, Nashville, TN.

"Fragility metamodels for vulnerability assessment of coastal bridges under hurricane hazard", *GDOT/GTI 4th Annual Transportation Research Expo*, Atlanta, GA.

Poster Presentation (2015) "Hurricane Risk Assessment of Georgia Coastal Bridges ", *GDOT/GTI 3rd Annual Transportation Research Expo*, Atlanta, GA.