

Arindam Paul

(440) 622-1087 | apaul@u.northwestern.edu | www.arindampaul.me | linkedin.com/in/arndmpaul/

SUMMARY	Computer Scientist working in Machine Learning with 8+ years research experience seeking full-time	
EDUCATION	Northwestern University , Evanston, Illinois USA	Jul '19
	Ph.D. Candidate, Computer Engineering	(expected)
	Master of Science, Computer Science	Sep '14
	Birla Institute of Technology & Science , Pilani, Rajasthan India	
	Master of Engineering (with Honors), Software Systems	May '12
	Bachelor of Engineering (with Honors), Chemical Engineering	Dec '09
PROGRAMMING SKILLS	Proficient: Python, Keras, Scikit-Learn, Tensorflow, Selenium, OpenCV, XGBoost Familiar: PySpark, R, MATLAB, C, C++, Java, SQL, weka, Javascript, HTML, CSS	
SELECT PROFESSIONAL EXPERIENCE	<i>Data Science Intern</i> , Northwestern Mutual , Milwaukee, Wisconsin	Jun - Aug 2018
	◊ Developed distributed image to text conversion algorithms from scanned questionnaires	
	◊ Designed a noise reduction algorithm to denoise scanned and photocopied questionnaires	
	<i>Research Intern</i> , Boeing Cybersecurity (Narus) , Sunnyvale, California	Jun - Sep 2013
	◊ Generated synthetic profiles with different demographic features for comparing ads across profiles	
	◊ Developed a machine learning model for predicting user demographics and interests from ads	
	<i>Research Assistant</i> , Northwestern University , Evanston, Illinois	2012 -
	• Deep Learning-based Predictive Model for Additive Manufacturing (Tensorflow, Keras)	
	◊ Created time series models for temporal analysis of heat flux data	
	◊ Investigated Recurrent Neural Network models to predict point-wise temperature information for accelerating additive manufacturing simulations	
	• Solar Cell Efficiency Prediction using Molecular Fingerprints (Tensorflow, Scikit Learn)	
	◊ Developed a multi-input input neural network architecture by merging different molecular representations as inputs for predicting chemical properties that outperformed other state-of-the-art models	
	◊ Designed Deep Neural Network and Random Forest models for predicting power conversion efficiency of solar cells using chemical fingerprints, and achieved mean square percentage error between 1.5-2 %	
	• Ensemble Learning-based Guided Optimization for Aircraft Design (MATLAB, Python)	
	◊ Created intelligent sampling algorithms to explore the constrained search space for candidate microstructures (constrained non-convex optimization problem)	
	◊ Achieved 100x more solutions compared to state-of-the-art methods that can accelerate the design-to-experiment life-cycle	
	• Convolutional Neural Nets for Thematic Image Classification in Pinterest (Keras, Theano)	
	◊ Harnessed Association Rule Mining for thematic label curation	
	◊ Developed ConvNet Models for hierarchical classification that led to automated image categorization based on themes	
	• Classification of Anonymous Posts using Urban Dictionary (Scikit Learn, Tensorflow)	
	◊ Generated vectorizer models using Word2vec trained on crowd-sourced (Urban Dictionary) & psycholinguistic (LIWC) dictionaries(Gensim)	
	◊ Attained prediction accuracy of 79.8 % and 78.1 % using LSTMs (using transfer learning) and ensemble models respectively	
SELECT TEACHING & LEADERSHIP	<i>President/Vice-President/Treasurer</i> , Northwestern Toastmasters	Sep '15 -
	◊ Lead the Northwestern chapter of Toastmasters; over 30 graduate students, post doctoral fellows from 10 departments	
	◊ Organized 1.5 hour weekly meetings to improve student public speaking skills	
	<i>Teaching Assistant & Guest Lecturer</i> , Northwestern University	Jan '14- Jun '17
	◊ Prepared and delivered weekly lectures for multiple CS courses (Data Structures, Social Media Mining, Intro to Python) to 20-50 students	
FELLOWSHIPS	McCormick Dean's Commendation Fellowship	'18 Spring
	Predictive Science and Engineering Design Fellowship	'16-'17
	Segal Design Fellowship	'14-'15
	Walter P. Murphy Fellowship	'12-'13
SELECT PUBLICATIONS (3 OF 14)	"Transfer Learning Using Ensemble Neural Nets for Organic Solar Cell Screening" , <i>International Joint Conference of Neural Networks</i> , 2019	
	"CheMixNet: Mixed DNN Architectures for Predicting Chemical Properties using Multiple Molecular Representations" , <i>NeurIPS</i> , 2018	
	"ElemNet: Deep Learning the Chemistry of Materials From Only Elemental Composition" , <i>Nature Scientific Reports</i> , 2018	