

SUMMARY	<b>Computer Scientist</b> working in <b>Machine Learning</b> with 5+ years research experience seeking full-time opportunities	
EDUCATION	<b>Northwestern University</b> , Evanston, Illinois USA [GPA: 3.7 / 4.0] Ph.D. Candidate, Computer Engineering Master of Science, Computer Science	<b>Jun 2019</b> (expected) <b>Sep 2014</b>
	<b>Birla Institute of Technology &amp; Science</b> , Pilani, Rajasthan India Master of Engineering (with Honors), Software Systems, May 2012 Bachelor of Engineering (with Honors), Chemical Engineering, Dec 2009	<b>May 2012</b> <b>Dec 2009</b>
PROGRAMMING SKILLS	Proficient: Python, Keras, Scikit-Learn, Tensorflow, Selenium, PySpark Familiar: R, MATLAB, C, C++, Java, PHP, LAMP, SQL, weka, Gephi, Javascript, html, css, Hadoop, Mahout, MPI	
SELECT PROFESSIONAL EXPERIENCE	<i>Data Science Intern</i> , <b>Northwestern Mutual</b> , Milwaukee, Wisconsin ◊ Developed distributed image to text conversion algorithms for detecting responses from scanned questionnaires ◊ Designed a noise reduction algorithm to denoise scanned and photocopied questionnaires	<b>Jun - Aug 2018</b>
	<i>Research Intern</i> , <b>Boeing Cybersecurity (Narus)</b> , Sunnyvale, California ◊ Generated synthetic user profiles with different demographic and interest features for analyzing ads across profiles ◊ Developed a machine learning model for predicting user demographics and interests from ads	<b>Jun - Sep 2013</b>
RESEARCH PROJECTS	<i>Research Assistant</i> , <b>Northwestern University</b> , Evanston, Illinois (2012 - ) <ul style="list-style-type: none"><li>• Deep Learning-based Predictive Model for Additive Manufacturing (Tensorflow, Keras)<ul style="list-style-type: none"><li>◊ Created time series models for temporal analysis of heat flux data</li><li>◊ Investigated Recurrent Neural Network models to predict point-wise temperature information for accelerating additive manufacturing simulations</li></ul></li><li>• Solar Cell Efficiency Prediction using Molecular Fingerprints (Tensorflow, Scikit Learn)<ul style="list-style-type: none"><li>◊ 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</li><li>◊ 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 %</li></ul></li><li>• Ensemble Learning-based Guided Optimization for Aircraft Design (MATLAB, Python)<ul style="list-style-type: none"><li>◊ Created intelligent sampling algorithms to explore the constrained search space for candidate microstructures (constrained non-convex optimization problem)</li><li>◊ Achieved 100x more solutions compared to state-of-the-art methods that can accelerate the design-to-experiment life-cycle</li></ul></li><li>• Convolutional Neural Nets for Thematic Image Classification in Pinterest (Torch)<ul style="list-style-type: none"><li>◊ Harnessed Association Rule Mining for thematic label curation</li><li>◊ Developed ConvNet Models for hierarchical classification that led to automated image categorization based on themes</li></ul></li><li>• Classification of Anonymous Posts using Recurrent Neural Networks (Tensorflow)<ul style="list-style-type: none"><li>◊ Generated vectorizer models using Word2vec trained on crowd-sourced (Urban Dictionary) &amp; psycho-lingual (LIWC) dictionaries(Gensim)</li><li>◊ Attained prediction accuracy of 79.8 % and 78.1 % using LSTMs and ensemble models respectively</li></ul></li></ul>	<b>Nov 2016 -</b> <b>Mar 2016 -</b> <b>Oct 2015 - Dec 2017</b> <b>Oct 2015 - Sep 2016</b> <b>Jan 2015 - May 2016</b>
SELECTED TEACHING AND LEADERSHIP	<i>President/Vice-President/Treasurer</i> , <b>Northwestern Toastmasters</b> ◊ 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	<b>Sep 2015 -</b>
	<i>Teaching Assistant &amp; Guest Lecturer</i> , <b>Northwestern University</b> ◊ Prepared and delivered weekly lectures for multiple CS courses (Data Structures, Social Media Mining, Intro to Python) to 20-50 students	<b>Jan 2014- June 2017</b>
FELLOWSHIPS	Predictive Science and Engineering Design Fellowship Segal Design Fellowship Walter P. Murphy Fellowship	<b>2016-2017</b> <b>2014-2015</b> <b>2012-2013</b>
SELECTED PUBLICATIONS (4 OF 13)	<b>A. Paul</b> , P. Acar, W. Liao, A. Choudhary, V.Sundararaghavan and A. Agrawal. “ <b>Microstructure Optimization with Constrained Design Objectives using Machine Learning-Based Feedback-Aware Data-Generation</b> ”, <i>Journal of Computational Materials Science</i> , 2019 <b>A. Paul</b> , D.Jha, R. Al-Bahrani, W. Liao, A. Choudhary and A. Agrawal.“ <b>CheMixNet: Mixed DNN Architectures for Predicting Chemical Properties using Multiple Molecular Representations</b> ”, <i>NeurIPS</i> , 2018 D.Jha, L.Ward, <b>A. Paul</b> , W. Liao, A. Agrawal, A. Choudhary and C. Wolverton.“ <b>ElemNet: Deep Learning the Chemistry of Materials From Only Elemental Composition</b> ”, <i>Nature Scientific Reports</i> , 2018 <b>A. Paul</b> , A. Agrawal, W. Liao and A. Choudhary. “ <b>AnonyMine: Mining anonymous social media posts using psycho-lingual and crowd-sourced dictionaries</b> ”, <i>Proceedings of the Workshop on Issues of Sentiment Discovery and Opinion Mining at 22nd Annual ACM Conference on Knowledge Discovery and Data Mining</i> , 2016.	