

Shantanu Ghosh

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OBJECTIVE	<i>To secure a PhD position in the area of Machine Learning/Deep Learning with a focus of Causal Inference and Computer Vision</i>		
RESEARCH INTERESTS	<i>Deep Learning, Machine Learning, Causal Inference, Computer Vision</i>		
EDUCATION	University of Florida , Gainesville, FL, USA		
	Master of Science, Computer and Information Sciences		
	Advisor: Dr. Mattia Proserpi		
	Area of study: Deep Learning, Machine Learning, Causal Inference Aug, 2019 - May, 2021		GPA: 3.88/4
	West Bengal University of Technology , West Bengal, India		
	Bachelor of Technology from Institute of Engineering and Management		
	Computer Science and Engineering		
	Aug, 2008 - June, 2012		GPA: 8.38/10
PUBLICATION	• <i>Deep Propensity Network using a Sparse Autoencoder for Estimation of Treatment Effects</i> - Shantanu Ghosh , Jiang Bian, Yi Guo, Mattia Proserpi. Journal of the American Medical Informatics Association (JAMIA) (Under review)		
	• <i>Causal AI with Real World Data: Do Statins Protect From Alzheimer's Disease Onset?</i> - Mattia Proserpi, Shantanu Ghosh , Zhaoyi Chen, Marco Salemi, Tianchen Lyu, Jiang Bian. American Medical Informatics Association (AMIA), 2020 (Under review)		
	• <i>Propensity Score Synthetic Augmentation Matching using Generative Adversarial Networks (PSSAM-GAN)</i> - Shantanu Ghosh , Jiang Bian, Mattia Proserpi. Thirty-Fifth AAAI Conference on Artificial Intelligence (Under review)		
RESEARCH EXPERIENCE	Data Intelligence Systems Lab (DISL) , Gainesville, FL, USA		
	Graduate Student Assistant		March 2020 - Present
	Advisor: Dr. Mattia Proserpi, Dr. Jiang Bian, Dr. Yi Guo		
	• Developed Deep Propensity Network - Sparse Autoencoder(DPN-SA) - a deep stacked sparse auto encoder based neural network model to calculate propensity score to estimate average causal effect (ATE) of a treatment in the area of Causal Inference. Code: https://github.com/Shantanu48114860/DPN-SA		
	• Developed Propensity Score Synthetic Augmentation Matching using Generative Adversarial Networks (PSSAM-GAN) - a deep learning training algorithm to generate synthetic treated samples to remove imbalance within a observational dataset for Propensity score matching (PSM). Code: https://github.com/Shantanu48114860/PSSAM-GAN		
	Multimedia Communications and Networking Laboratory (MCN) , Gainesville, FL, USA		
	Independent Researcher		Feb 2020 - May 2020
	Advisor: Dr. Dapeng (Oliver) Wu		
	Developed a Deep Convolutional Multitask Neural Network to classify different textures within a image under the supervision of Dr Prof Dapeng Oliver Wu of the Department of Electrical & Computer Engineering in the University of Florida.		
	Code: https://github.com/Shantanu48114860/MTL-TCNN3		

PROFESSIONAL EXPERIENCE	Lexmark International India Pvt Ltd , Kolkata, West Bengal, India <i>Software Engineering Professional II</i> Oct 2016 - July 2019 Worked as a Senior UI developer for the product Publishing Platform for Retail (PPR) and developed InStore Publisher component (ISP) of PPR using Angular, Bootstrap, HTML5, CSS and performed unit testing using Jasmine/Karma Framework with active participation in 2 major releases.
	Cognizant Technology Solutions India Pvt Ltd , Kolkata, West Bengal, India <i>Associate, Projects</i> March 2013 - September 2016 As an Application developer of the project Wells Fargo Domain Services and Customer Centre Optimization, developed 9 WCF web services in the Contract First Approach to provide secure communication between different In-house applications and the reporting platform of Wells Fargo using Service Oriented Architecture (SOA) using C#.Net 4.5, Oracle Client 11g.
PROJECTS	Classification of Handwritten Characters Oct 2019 - Dec 2019 <i>Fundamentals of Machine Learning, University of Florida, FL, USA</i> Developed a deep CNN to classify Handwritten Characters, by training it with the Handwritten Character Dataset under the guidance of Prof Alina Zare, inspired by the famous architecture " Lenet " (http://yann.lecun.com/exdb/publis/pdf/lecun-01a.pdf) by utilizing the Adam Optimizer, Batch Normalization and dropout and achieved a classification accuracy of 97.3% on a customised data set prepared by Prof Zare <ul style="list-style-type: none"> • Technology/Tools: Python, Pytorch • Link : https://github.com/Shantanu48114860/Handwritten-Character-Recognition
	Implementation of P2P network Nov 2019 - Dec 2019 <i>Computer Networks, University of Florida, FL, USA</i> Created a peer-to-peer (P2P) network for file downloading. Developed components – peer and file owner. The file owner has a file, and breaks the file into chunks of 100KB. Each peer connects to the file owner to download some chunks with the help of two threads, one acting as a server that uploads the local chunks to another peer (referred to as upload neighbor), and the other acting as a client that downloads chunks from a third peer (referred to as download neighbor). Tested the code with max 5 peers and max file size of 13.3 MB . <ul style="list-style-type: none"> • Technology/Tools: Socket Programming, Java • Link : https://github.com/Shantanu48114860/P2P-File-sharing
	Hashtag Counter March 2020 - April 2020 <i>Advanced Data Structures, University of Florida, FL, USA</i> Implemented a system to find the most popular hashtags that appear on social media using Max Fibonacci Heap data structure and a max priority structure to find out the most popular hashtags. Tested the code with 1M hashtags. <ul style="list-style-type: none"> • Technology/Tools: Java • Link : https://github.com/Shantanu48114860/HashTagCounter
	Languages : Python, C++, C, Java, C#, Javascript/Typescript Database : MySQL, Oracle 9i/10g, MS SQL Server, DB2 Web Development : Angular, Node.js, WCF Machine Learning : TensorFlow, PyTorch, NumPy, Scikit-learn
CERTIFICATION	<ul style="list-style-type: none"> • Mathematics for Machine Learning: Linear Algebra by Imperial College of London on Coursera Verify : https://www.coursera.org/account/accomplishments/certificate/WQ4T9KJY9BMQ

• **Mathematics for Machine Learning: Multivariate Calculus** by Imperial College of London on *Coursera*

Verify : <https://www.coursera.org/account/accomplishments/certificate/6T8VSZFQQTL3>

• **Neural Networks and Deep Learning** by Prof Dr Andrew Ng on *Coursera*

Verify : <https://www.coursera.org/account/accomplishments/certificate/7QTVEMQDCBYT>

• **Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization** by Prof Dr Andrew Ng on *Coursera*

Verify : <https://www.coursera.org/account/accomplishments/certificate/K5CPQ59DJU4H>

• **Convolutional Neural Networks** by Prof Dr Andrew Ng on *Coursera*

Verify : <https://www.coursera.org/account/accomplishments/certificate/Q5C738AYSZ3Q>

GRADUATE COURSES

• Fundamentals of Machine Learning • Distributed Operating Systems • Computer Networks • Mathematics for Intelligent Systems • Advanced Data Structures
• Machine Learning • Deep Learning Computer Graphics • Fundamentals of Probability

ACHIEVEMENTS.

• Recipient of **National Scholarship** Award from **Central Government Human Resource Development Department of Higher Education, India** for excellent result in Higher Secondary Examination in the state of West Bengal, India.

• Topped with **1%** of all candidates appeared in **West Bengal Joint Entrance Examination** in 2008.

• Received **Achievement Award** during the admission of graduate studies in the University of Florida in Fall 2019.

REFERENCES

Available upon request.