# Shantanu Ghosh

LinkedIn : https://www.linkedin.com/in/i-am-shantanu-ghosh/
Github : https://github.com/Shantanu48114860

beingshantanu2406@gmail.com
+1 (352)871-3965
3800 SW 34th ST, Apt W220,
Gaineville, FL 32608, USA

---

**OBJECTIVE**

*To secure a PhD position in the area of Machine Learning/Deep Learning with a focus of Causal Inference and Deep Learning*

**RESEARCH INTERESTS**

*Deep Learning, Causal Inference, Computer Vision*

**EDUCATION**

**University of Florida**, Gainesville, FL, USA
*Master of Science*, Computer and Information Sciences
*Advisor*: Dr. Mattia Prosperi
*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**

• *Deep Propensity Network using a Sparse Autoencoder for Estimation of Treatment Effects* - **Shantanu Ghosh**, Jiang Bian, Yi Guo, Mattia Prosperi. Journal of the American Medical Informatics Association (JAMIA) **(Under review)**

• *Causal AI with Real World Data: Do Statins Protect From Alzheimer's Disease Onset?* - Mattia Prosperi, **Shantanu Ghosh**, Zhaoyi Chen, Marco Salemi, Tianchen Lyu, Jiang Bian. American Medical Informatics Association (AMIA), 2020 **(Under review)**

• *Propensity Score Synthetic Augmentation Matching using Generative Adversarial Networks (PSSAM-GAN)* - **Shantanu Ghosh**, Jiang Bian, Mattia Prosperi. 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 Prosperi, Dr. Jiang Bian, Dr. Yi Guo
• Working to develop a deep recurrent neural based model to perform longitudinal propensity score matching.

• 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**]

• 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**]

**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**]

**PROFESSIONAL EXPERIENCE**

**Lexmark International India Pvt Ltd**, Kolkata, West Bengal, India
*Software Engineering Professional II*                    ***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
*Associate, Projects*                    ***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**
***Fundamentals of Machine Learning, University of Florida, FL, USA***

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 [**Code**]
  • **Technology/Tools:** Python, Pytorch, Sckit-learn

**Implementation of P2P network**                    **Nov 2019 - Dec 2019**
***Computer Networks, University of Florida, FL, USA***

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**. [**Code**]
  • **Technology/Tools:** Socket Programming, Java

**Hashtag Counter**                    **March 2020 - April 2020**
***Advanced Data Structures, University of Florida, FL, USA***

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. [**Code**]
  • **Technology/Tools:** Java

**TECHNICAL SKILLS**

**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, Scikit-learn

**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.