Ayon Sen

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Apt 103, 1317 Spring Street, Madison, WI 53715

EDUCATION

UW-MADISON
PhD in Computer Sciences
Start Aug 2014 | Madison, WI

BUET
MSc in CSE
Grad. May 2014 | Dhaka, Bangladesh
Conc. in Machine Learning
Cum. GPA: 3.92 / 4.0

BSc in CSE
Grad. April 2012| Dhaka, Bangladesh
Cum. GPA: 3.94 / 4.0
Merit Position: 2^{nd}

LINKS

LinkedIn:// ayonsn
Twitter:// @ayonsn
dblp:// AyonSen

COURSEWORK

GRADUATE
Machine Learning
Advanced Machine Learning
Mathematical Statistics-I
Statistical Inference
Data Science
Non-Linear Optimization-I
Human Computer Interaction
Neural Networks
Data Mining
Advanced Computer Networks
Distributed Computing Systems

UNDERGRADUATE
Artificial Intelligence
Pattern Recognition
Computer Graphics
Database
Computer Networks

SKILLS

PROGRAMMING
C • C++ • Java • C# • Spring • Git
HTML • JavaScript • SQL • Matlab
Oracle 11g • Shell • MySQL • Python
LaTeX• ASP.NET • Crystal Report • XML
JSON • MapReduce • JEXL • Prolog
Weka • Nachos • Lex • YACC

EXPERIENCE

UW-MADISON | Graduate Research Assitant
Aug 2015 – Present | Madison, WI

I am currently working with Prof. Xiaojin (Jerry) Zhu on the Machine Teaching problem. In machine teaching the teacher knows the target goal such as the target model. Based on this known target she wants to design an optimal training set for the learner. Machine teaching has applications both in the fields of educational psychology as well as computer security. My current research is mostly focused on educational psychology such as chemistry, mathematics and language learning as well as human perception of adversarial examples.

FACEBOOK | PhD Intern

May 2018 – Aug 2018 | Seattle, WA
I worked on the Pages Integrity team on the Business Impersonation Detection problem. Impersonation is a serious problem that often acts as a gateway to a variety of other issues such as privacy violations, data breach, phishing attacks, scams, misinformation etc. causing heavy damage to both users and Facebook. I focused on building the backend infrastructure for realtime impersonation detection based on text. In particular I used different text matching techniques (including a Siamese DNN) that are robust to adversarial obfuscations. My efforts helped increase the coverage of impersonation detection by around 20% with improved precision.

AMAZON | Applied Scientist Intern

May 2017 – Aug 2017 | Seattle, WA
I worked on the Core Machine Learning team on the substitutes recommendation problem. In this system substitutes of products are suggested to the customers. I designed a DNN model which does not use behavioral data (from customers) or hand tuned features. Hence the model is easily applicable to newer or unpopular products. In particular the model was trained using a triplet architecture i.e., each input contained features for three products. Our experiments suggested that the model performed better than the production model being used at the time.

RESEARCH

RESEARCH INTEREST
- Machine Teaching.
- Machine Learning.

SELECTED PUBLICATIONS
- Ayon Sen, Xiaojin Zhu, Liam Marshall, Robert Nowak: Should Adversarial Attacks Use Pixel p-Norm?. arXiv:1906.02439. 2019.
- Ayon Sen, Scott Alfeld, Xuezhou Zhang, Ara Vartanian, Yuzhe Ma, Xiaojin Zhu: Training Set Camouflage. Gamesec 2018.
- Ayon Sen, Purav Patel, Martina A. Rau, Blake Mason, Robert Nowak, Timothy T. Rogers, Xiaojin Zhu: Machine Beats Human at Sequencing Visuals for Perceptual-Fluency Practice. EDM 2018.
- Ayon Sen, Md. Monirul Islam, Kazuyuki Murase, Xin Yao: Binarization With Boosting and Oversampling for Multiclass Classification. IEEE T. Cybernetics 2015, Issue 99.
- Ayon Sen, Sheeraz Ahmad: Learning Substitutes Relationship with Deep Ranking. AMLC 2018.