Shivin Srivastava

Curriculum Vitae

Research Interests

Bayesian Machine Learning, Computational Models of Cognition, Information Retrieval, Deep Learning, NLP

Education

2020 - 2024	**Ph.D. Candidate at School of Computing**, *National University of Singapore*, Singapore, *CGPA – N.A.*
2017 - 2019	**M.E(Hons) Computer Science and Engineering (First Class)**, *BITS-Pilani, Pilani Campus*, India, *CGPA – 8.71.*
2013 - 2017	**B.E(Hons) Computer Science and Engineering (First Class)**, *BITS-Pilani, Pilani Campus*, India, *CGPA – 8.73.*
2011-2013	**Senior Secondary**, *Delhi Public School, Gurgaon*, Haryana, India, *94.8%.*
2009-2011	**Secondary**, *Delhi Public School, Gurgaon*, Haryana, India, *CGPA-9.8/10.0.*

Publications

Shivin Srivastava. Extracting Addresses from Unstructured Text using Bi-directional Recurrent Neural Networks. The IEEE International Conference on Data Mining (ICDM) PhD. Forum, Singapore, 2018

Shivin Srivastava, Ashutosh Bhatia. On the Learning Capabilities of Recurrent Neural Networks: A Cryptographic Perspective. The IEEE International Conference on Big Knowledge (ICBK), Singapore, 2018

Harsh Sinha, **Shivin Srivastava**, Yash Sinha. Studying the Role of Kinect as a Multi-Sensory Learning Platform for Children. The ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), Singapore, 2018

Poonam Goyal, Jagat Sesh Challa, **Shivin Srivastava**, Navneet Goyal. AnyFI: An Anytime Frequent Itemset Mining Algorithm for Data Streams. IEEE International Conference on Big Data (IEEE Big Data), Boston, MA, USA, 2017

Nilay Jain, **Shivin Srivastava**, Lavika Goel. A novel PSO based algorithm to find initial seeds for the k-means clustering algorithm. The International Conference on Communication and Computing Systems (ICCCS), Gurgaon, India, 2016

Research Experience and Projects

2018	**Learning To Break Classical Cryptographic Ciphers Using Recurrent Neural Networks** We train artificial neural networks (LSTMs) to break classical cryptographic ciphers by learning their encryption process and use it to recover the key completely given only the plaintext and ciphertext. Published in IEEE Conference on Big Knowledge (ICBK), Singapore, 2018

Room No. 3342, Malviya Bhavan, BITS Pilani, Pilani
Rajasthan, India - 333031
✆ *+917728835709* • ✉ *shivin.srivastava@gmail.com*
Personal Site www.github.com/shivin9   *1/2*

2017	**AnyFI** Completed my **undergraduate thesis** in Data Mining under guidance of Dr. Poonam Goyal to design and develop algorithms to mine interesting patterns from high-speed data streams in an Anytime fashion. Accepted in **IEEE Big Data 2017** (acceptance ratio 20%).
2016	**AI Checkers** This project was done as a part of the on campus course, Artificial Intelligence. We used TD-learning along with a Neural Network to learn the value of state-action pairs. The final agent was capable enough to beat a novice player.
2015	Competed in **Xerox's Mortality Prediction Competition**. Had to predict the mortality rate of ICU patients in an online manner given their vital statistics and lab results in a time series manner. Finished in **Top 20 (All India)**

Experiences

Project Intern, *with JuliaLab, MIT* - 2017, May 2019-Present

Description	Working with **JuliaDiffEq** to develop a new package DiffEqOperators.jl. It uses Finite Difference Method(FDM) to solve Partial Differential Equations defined on simple geometries and creates efficient discretizations of partial differential operators thereby converting PDEs to ODEs which can be solved efficiently by existing ODE solvers. Exploring connections between PDEs and Neural Networks
Technology	Julia Language, Finite Discretization Methods
Role	Project Intern

Research Intern, *Keio-CUTE Center, NUS* - 2016

Description	I worked under Dr. Kelvin Cheng on the Travello WebApp. Travello is a travel iteranery tool which aims to simplify the process of trip planning. Users can add points of interest while browsing the internet and my job was to automate this process. I used Machine Learning (Deep Neural Networks) and Data Mining tools to automate the extraction of place name, addresses, images and text from arbitrary webpages
Technology	Deep Learning Tools: Theano and Lasagne
Role	Research Engineer

Co-creator, *Yoga Sutra, Mentored by Microsoft,* 2015

Description	Yoga Sutra is a Kinect based application which is able to give real-time voice-feedback while assisting one to practice various Yoga *Asanas.* Our major focus was on visually-impaired users.
Level 1	**Won** Microsoft code.fun.do, developed Yoga-Sutra during the competition
Level 2	**Won** the **Coding Milestone** in the Finalist's Forum of Microsoft where the best Code.Fun.Do teams from India participated
Technology	Kinect SDK 2.0, Microrsoft Visual Studio
Role	Designer, Developer

Awards

2018	Microsoft Research Travel Grant
2018	BITS Alumni Association Travel Award
2013	Gold Medal, DPS Gurgaon

Room No. 3342, Malviya Bhavan, BITS Pilani, Pilani
Rajasthan, India - 333031
℘ *+917728835709* • ✉ *shivin.srivastava@gmail.com*
Personal Site *www.github.com/shivin9* *2/2*