Arya Prabhudesai

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Interests: Machine Learning, Computer Vision, Natural Language Processing

EDUCATION

University of California San Diego **2021 - Present**

Master of Science in Computer Science CGPA: NA

College of Engineering Pune, India **2016-2020**

Bachelor of Technology in Computer Engineering (Honours) CGPA: 9.84 / 10

Branch Gold Medallist and Institute Topper

WORK EXPERIENCE

Dec 2020 - Aug 2021 **Data and AI Specialist**

Signpost India Pvt Ltd, Mumbai, India

- Developed AI models for data mining and data analytics applications
- Worked on implementing supervised and unsupervised models for event extraction from textual data

May 2020 - Dec 2020 **Artificial Intelligence Research Intern**

Bharatrath, Pune, India

- Developed and deployed a chatbot to handle customer orders, perform spellcheck and product mapping, process requested quantities, and generate bill

May 2019 - Jul 2019 **Research Assistant**

Nanyang Technological University, Singapore | Guide : Ta N. B. Duong

- Worked on developing an Automatic Short Answer Grading (ASAG) System using a hybrid Siamese Bi-LSTM network. Research paper presented and published at the IEEE TALE 2019

May 2018 - Jul 2018 **Deep Learning Research Intern**

Mobiliya Technologies, Pune, India

- Worked on developing and implementing NLP models and libraries for Indian regional languages. Developed a Document Ranking system for Hindi using Deep Learning architectures. Research paper presented and published at the IBICA-WICT 2018

PUBLICATIONS

- **Arya Prabhudesai,** Ta Nguyen Binh Duong : "Automatic Short Answer Grading using Siamese Bidirectional LSTM Based Regression", *IEEE International Conference on Engineering, Technology and Education (TALE), 2019*
- **Arya Prabhudesai** : "Generation of Hindi Word Embeddings and Their Utilization in Ranking Documents Using Negative Sampling Architecture, t-SNE Visualization and TF-IDF Based Weighted Average of Vectors", *International Conference on Innovations in Bio-Inspired Computing and Applications. Springer, Cham, 2018*

SELECTED PROJECTS

Aug '19 - Present **Face Liveness Detection Against 2D Spoofing Attacks using Deep Learning**

- Created a dataset of 1440 pictures: 16 subjects photographed under variable flash light settings; incorporated 5 different types of spoofing attacks
- Developed two systems for the task: a neural network-based primary approach, and a hybrid approach which combined handcrafted features with CNNs
- Analysed performance of both the systems to obtain benchmark results
- Research papers currently under review

May '19 - Jul '19 **Automatic Short Answer Scoring**

- Implemented a Siamese Bidirectional LSTM network with a combination of handcrafted features. Obtained benchmark results for the task on the Mohler dataset
- Research paper presented and published at the IEEE TALE 2019

Aug '18 - May '19 **Chatbot for College of Engineering Pune Website**

- Designed and implemented a chatbot application for the COEP website to respond to queries about faculty, college fests, and campus buildings. Used tools such as Stardog for data warehousing, and LSTM networks for training the model

May '18 - July '18 **Document Ranking System for Hindi Language using Deep Learning**

- Generated Hindi language word embeddings using a Negative Sampling Architecture
- Utilised the embeddings paired with a tf-idf scoring scheme to create a ranking system for Hindi documents
- Published and presented a research paper at the Springer IBICA-WICT 2018

Jan '18 - May '18 **Devanagari Script Character Recognizer**

- Implemented a Convolutional Neural Network and achieved an accuracy of 98.4% on the test dataset

RELEVANT COURSE WORK

Through Curriculum	**Artificial Intelligence and Mathematics**	• Artificial Intelligence • Linear Algebra • Information Retrieval	• Data Science • Probability & Statistics	• Natural Language Processing • Multivariate Calculus • Differential Equations
	Programming and Computer Architecture	• Data Structures and Algorithms (Advanced) • Computer Organisation	• Algorithms and Complexity • Multicore Technology	• Multiprocessor Techniques (Advanced) • Parallel Computer Architecture
Through Online Study		• Complete Guide to TensorFlow for Deep Learning with Python - Udemy • Deep Learning A-Z : Hands-On Artificial Neural Networks - Udemy • Machine Learning by Andrew Ng - Coursera (Audited) • Quantum Computing and Quantum Physics for Beginners - Udemy		

SKILLS

Languages: C, C++, Java, Python
Libraries and Toolkits: TensorFlow, pandas, NumPy, Matplotlib, Keras, PyTorch, Caffe, spaCy
Version Control: Git
Platforms: Stardog, NVIDIA DIGITS, CUDA, MySQL

ACHIEVEMENTS

- Institute Rank 1, College of Engineering Pune *2020*
- Gold Medallist, Computer Engineering, College of Engineering Pune *2020*
- Batch Topper, Computer Engineering, College of Engineering Pune *2017, 2018, 2019*
- Batch Topper and Best Outgoing Student, Marathwada Mitramandal's Junior College of Science *2016*
- Batch Topper, Vidya Valley School Pune *2014*
- Selected among 30 students from Pune for the Infosys Catch Them Young program *2012*

EXTRACURRICULAR ACTIVITIES

- Writer, English Section, Abhiyanta (Annual College Magazine) (2016 - 2020)
- Organised and conducted a seminar on "International Research Internships" for undergraduate students at the College of Engineering Pune (September 2019)
- Attended the "NVIDIA Workshop on Deep Learning" held in Pune (2018)
- Media Coordinator, MindSpark (Annual College Technical Fest) (2017)
- Teaching Assistant at the Doorstep School Pune for underprivileged children, 2014
- Active squash player. Reader and writer.