Shubham **Dokania**

Software Developer · Data Scientist

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Education

Delhi Technological University(Formerely DCE) — *New Delhi, India*

B.Tech. in Mathematics and Computing Engineering — *Aug. 2013 - PRESENT*

North Delhi Public School — *New Delhi, India*

AISSCE (All India Senior School Certificate Examination) — *Apr. 2011- May. 2013*

Skills

Programming	Python, C++, C, JavaScript, MySQL, Java, MATLAB, LaTeX, HTML5, Bash
Frameworks & Libraries	Django, Flask, Node.js, Theano, OpenCV, Keras, TensorFlow, Scipy, Scikit-learn
Familiar	Lasagne, PyBrain, Android, MongoDB, Unity3D, Lua, Apache Spark, Ruby

Experience

Computer Vision Lab, DTU — *New Delhi, India*

Undergraduate Researcher — *Jan. 2016 - PRESENT*

- Studying Apache Spark and it's applications with Spark Streaming for Distributed Computing on video feeds.
- Implementation of robust, unsupervised feature descriptors, and research on various Machine Learning problems.

Codementor — *New Delhi, India*

Mentor — *Dec. 2015 - Present*

- Expert Mentor on Codementor for help in Python, Machine Learning, Django, and general programming.
- Teaching people around the world and helping the developer community to grow.

Greplr — *New Delhi, India*

Co-Founder & Full Stack Developer — *May. 2015 - Feb. 2016*

- Developed a hyper-local discovery platform and service aggregation application with a scalable architecture.
- Exposed REST APIs to support android application using Flask(Python Framework) and Parse for Database backend and analytics.

Publications

Visual Feature based Path Retrieval over Distributed Geospatial Subspaces using Interval Based Approach [under review] — *Research Publication*

Undergraduate Research Student — *Feb. 2016 - June 2016*

- Proposed a system for large scale facial tracking and path retrieval over geospatial subspaes by generating robust features using unsupervised methods.
- Paper under review at Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP) 2016 IIT Guwahati.

Modification to an Evolutionary Optimization Algorithm [under review] — *Research Publication*

Undergraduate Research Student — *Oct. 2015 - Apr. 2016*

- Modified an evolutionary optimization algorithm to achieve better accuracy for multi-dimensional objective funtions, and achieved promising results for a variety of test applications as well.
- Transcript under review at IEEE Transaction on Evolutionary Computing (TEVC).

Projects

Deep Q-Learning and Reinforcement Learning — *New Delhi, India*

Machine Learning, Deep Learning, Unsupervised, Reinforcement Learning, OpenAI — *May 2016 - Jun. 2016*

- Built Neural Network model based on RNNs and CNNs to learn various states of a game, given only input frames and rewards.
- Achieved a goal of optimizing an agent to play the games on OpenAI gym simulator and achieve human-like accuracy.

Tracking using multi-camera environment

New Delhi, India

Machine Learning, Computer Vision, Database — *Mar. 2016*

- Designed a tracking interface using multiple cameras for face detection and recognition from database to know trajectory followed by a person.
- Built for surveillance tasks at public places. Prototype was presented at Code for India hackathon, at Rashtrapati Bhawan, India

Library for Evolutionary Optimization Techniques

New Delhi, India

Evolutionary Algorithms, Game Theory, Neural Networks, Optimization Techniques — *Dec. 2015 - Mar. 2016*

- Built an Evolutionary Optimization Library for APIs for algorithms such as Genetic Algorithm, Particle Swarm Optimization, Differential Evolution etc.
- Designed a virtual bot to play board games while optimizing the outcomes to achieve a win (Link, Link)

Food Requirement Simulation and Prediction

New Delhi, India

Data Science, Server — *Oct. 2015*

- Developed a web dashboard to display data and predictions for food consumption and wastage for the NGO Akshaya Patra.
- Exposed APIs for data and Predictions using Django. The prototype won the Grand Prize award at CodeForIndia 2015 Hackathon.

Autonomous Robot Navigation System Using Kinect

New Delhi, India

Computer Vision, Embedded Systems — *Mar. 2015 - May 2015*

- Built an autonomous robot and designed it's obstacle avoidance and navigation system using OpenCV Python library.
- Analyzed performance on various development boards (Raspberry Pi, BeagleBone Black etc.) by running and optimizing the scripts.
- Used Depth maps and pixel intensity calibrations to compute distance of multiple obstacles and calculate a feasible path.

Honors & Awards

Oct. 2015	**Grand Prize Winner**, Code For India Hackathon	*New Delhi, India*
July 2015	**Grand Prize Winner**, HackIndia 2015	*Bangalore, India*
Apr. 2015	**1st in Track**, PolicyHacks by EPoD, Harvard University	*New Delhi, India*
Mar. 2015	**3rd Position**, </geekfest> 2015 by 91SpringBoards and IBM Bluemix	*New Delhi, India*
Mar. 2015	**Special Mention**, Byldathon at IIIT Delhi	*New Delhi, India*
Oct. 2013	**Best Student Award**, The Times of India(TOI)	*New Delhi, India*
Aug. 2010	**2nd in State**, National Science Talent Search Examination	*New Delhi, India*