

# Nishant Arora

*Applied Researcher, Deep-Learning Enthusiast, Seasoned Full-Stack Developer*

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I studied subjects related to Deep Learning, Computer Vision, Android and HCI during my Masters. I am constantly looking to invest in new opportunities that help me grow and have the potential to change the world.

nishantarora.in  
nishantarora.in/CV  
nishantarora.in/github  
nishantarora.in/linkedin

## DEVELOPMENT STACK

- Google AppEngine
- Python/Node
- JavaScript/HTML/Full Stack
- Android/Java
- Numpy/Tensorflow (Machine Learning)
- OpenCV (Computer Vision)

## EDUCATION

### **M.Sc. Applied Computing - University Of Toronto.**

*September 2016 — December 2017*

- Introduction to Machine Learning.
- Creative Applications for Mobile Devices
- Communication for Computer Scientists
- Human-Computer Interaction
- Advanced Mobile User Interfaces
- Deep Learning in Computer Vision

### **B.Tech. Computer Sciences and Engineering - Maharshi Dayanand University.**

*August 2008 — May 2012*

- Data Structures and Algorithms
- Web Development
- Intelligent Systems
- Digital Electronics
- Digital and Analog Communications
- Compiler Design

## WORK EXPERIENCE AND PROJECTS

### **Computer Vision and Deep Learning Researcher at Nureva Inc., Calgary, Alberta, Canada**

*May 2017 — Present*

#### **● Software Development Engineer:**

*Jan 2018 — Present*

Working on the extension of my internship project, exploring further possibilities in the same domain.

- Improved model inferencing performance by 160x. Allowing real-time processing of multiple videos.
- Implemented real-time heuristical camera switching pipeline.

*Skills Used: Python, C++, CUDA, Numpy, OpenCV, DLib, Tensorflow, Bash*

#### **● Technical Internship (Master's Requirement):**

*May 2017 — December 2017*

Worked under supervision of Mr. David Popovich (Nureva Inc.) and Prof. Sanja Fidler (UofT) researching on deep learning based contextual real-time camera switching techniques.

- Equipped a model conference room to simulate meeting scenarios and generate custom data sets.
- Built a testing apparatus for recording, storing, processing and streaming multiple-streams of Full HD videos.
- Applied state of the art deep learning techniques to implement head-pose estimation, gaze/attention detection models and perform activity recognition.

- Contributed to the OpenCV project to improve CUDA integration.

*Skills Used: Python, C++, CUDA, Numpy, OpenCV, DLib, Tensorflow, Bash*

### **Teaching Assistant at University of Toronto, Toronto, Ontario, Canada.**

*September 2016 — April 2016*

Worked with Prof. Karen Reid and Prof. Amir Chinaei for CSC309 - Programming on The Web course.

#### **● Lab/Assignment Designing, Testing and automation:**

- Built an Instagram Proxy API for students to help them learn node and REST api concepts.
- Enforced students to be accustomed to latest industry standards and relevant style guides.
- Conducted live coding sessions for the entire term and helped students with their projects during lab hours.

*Skills Used: Python, Bash, Node, GitHub, JS.*

**Software Engineering Consultant** at *Google, Gurgaon, Haryana, India.*

*August 6, 2012 — August 5, 2016*

Worked with gTech engineering and and undertook multiple roles:

- **Tools Specialist - gTech Engineering Devshop** *Jan 2015 — Aug 2016*
  - Managed and maintained two internal business intelligence tools used by the AdSales Team.  
*Skills Used: Python, AngularJS, Backbone.js, Blaze Build system, Google AppEngine.*
- **Crawling Specialist (SME) - Gmail Intelligence - Google Now** *July 2014 — December 2014*
  - Worked on intelligent parser backend which provides vital actionable information for multiple google projects like google now, gmail cards, etc.  
*Skills Used: Crawzall (Internal Crawling Infrastructure), JS, Python.*
- **Deep Link Crawling Specialist - Flight Data Quality** *August 2013 - June 2014*
  - Contributed to JS/Webkit based deep-link crawling mechanism to analyse airline prices.  
*Skills Used: JS, C++, Crawzall (internal Crawling Infrastructure).*
- **Real Time Resource Analytics and Reporting** *August 2012 - July 2013*
  - Built a chrome extension based tracking tool for 3rd party contributors on the Freebase project.  
*Skills Used: PHP, JS, Chrome Extensions, MySQL, Apache, Google APIs.*

## PERSONAL PROJECTS

- **Instagram Proxy API:** CORS compliant ReSTful API for Instagram's public Data. Appeared on Github Trending.  
*Skills Used: Node, Heroku, APIs.*
- **Arduino Based Hexa-Rotor Helicopter:** Based on *Ardupilot Mega* platform, payloads capacity: 4kgs
  - Involved my aeronautical engineer friend, to understand avionics.
  - Controlled using telemetry device attached to an android phone.  
*Skills Used: Arduino, Complex Electronic Circuits, Avionics, Power Distribution, Android, Python.*
- **Youtube on repeat - Chrome Extension:** Fan made extension for youtubeonrepeat.com  
*Skills Used: Javascript, Chrome.*

## GRADUATE PROJECTS

- **Transfer Learning based image recognition:** As a part of course project, built a transfer learning based Image classifier and scored a top ten rank among more than two hundred students.  
*Skills Used: Python, TensorFlow, Inception*
- **Using Fingerprint Reader as touchpad — UX Study:** Conducted a user study to understand back of the device interaction by converting the fingerprint reader on the rear side of the phone into a touchpad.  
*Skills Used: Android, Java, HCI research techniques.*
- **Recognizing Texts in the wild:** This was my deep learning project, where I built a model for classification and segmentation of the text appearing in the images in the wild.  
*Skills Used: Python, Keras, TensorFlow.*

## UNDERGRAD PROJECTS

- **WiFi and Arduino Based Surveillance Robot:** based on recycled RC car platform.
  - Soldered all circuits from scratch. Made all mounts and holders from recycled materials.
  - Used a wifi router as a hotspot, Arduino chip with wifi shield as controller. IP Camera to provide video feed.
  - Built a very high power H-Bridge motor driver using mechanical relays.  
*Skills Used: Radio Transmission Techniques, Arduino programming and Hardware, Tools, MCU.*
- **Scara Robot:** Designed and Implemented a 2D Robotic arm to write using a marker attached to its hand.  
*Skills Used: Arduino programming and Knowledge about Hardware, Tools, Design and MCU.*
- **Hexapod Bot and Line Follower Bot:** These two bots were made in workshops, earning a first prize, successfully executed all the stances of a Hexapod and functions of Line Follower and edge detector  
*Skills Used: Arduino programming and Knowledge about Hardware, Tools, Design and MCU.*