Aman **Jhunjhunwala**

4 months / 8 months Internship Applicant (from May 2018)

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Experience

Autonomoose — *Waterloo, Canada*

Graduate Researcher : Autonomous Driving — *September, 2017 - Present*

- Working with Behavioral Planning and Perception Teams with a major goal to adapt and implement Options based Reinforcement Learning to the autonomy stack and shift from rule based to dynamically learnt planning
- The team demonstrated their technology in CES 2017 and CES 2018 and plans to achieve first pulic road drive in Canada by October'17

ETH Autonomous Systems Lab (Google X : Project Tango) — *Zurich, Switzerland*

Researcher : Computer Vision, Deep Learning — *April, 2017 - September, 2017*

- Responsible for extending MapLab platform for applying deep learning for semantic understanding (segmentation) and long term memory in the Visual Inertial Frame on Google Tango RGB-D Maps and retrofit derived semantics in the original VI Map landmarks
- Deployment of networks to Tensorflow on Android for Tango Tablets, enabling realtime edge computation

CalTech - California Institute of Technology — *Pasadena, Los Angeles, California*

Summer Undergraduate Research Fellow — *May, 2016 - July, 2016*

- Project Maxwell : Developing an Artificially Intelligent Scientist
- Responsible for developing an optimized, parallel, high speed Evolutionary search algorithm that infers mathematical and physical theories through a set of virtual experiments on the corresponding systems.

Harvard University : Harvard Smithsonian Center for Astrophysics

Google Summer of Code 2015 — *April, 2015 - August, 2015*

- Project AstroPython : Devloping a cloud solution from scratch in Django for a community knowledge base for Python in Astronomy
- AstroPython is currently the world's most popular generic site for Python in Astronomy

Honors

2017	**Undergraduate Computer Science Gold Medal**, Standing 1st among 400+ CS students	*India*
2017	**Incoming International Masters Students Award**, Graduate Scholarship of ₹000$	*Kitchener, Canada*
2016	**MITACS Globalink Fellowship**, Highest undergraduate award by Canadian Government	*Vancouver, Canada*
2016	**CalTech-SURF Fellowship**, One of the most prestigious undergraduate Fellowship	*Los Angeles, U.S.A*
2016	**Microsoft Build The Shield**, India Finalist	*Hyderabad, India*
2015	**Google Summer of Code**, under Python Software Foundation	

Education

University of Waterloo — *Kitchener, Canada*

Masters of Mathematics (Thesis) in Computer Science — *September, 2017 - May, 2019*

- Specialization : AI, Reinforcement Learning & Autonomous Driving

Birla Institute of Technology — *Mesra, India*

Bachelor of Engineering in Computer Science — *July, 2013 - April, 2017*

- **Gold medalist** with multiple academic achievements per semester, ranked **1st / 400** with an absolute CGPA of **9.3 / 10**

Research

Benchmark defining Realtime Mobile RGB-D Segmentation — *July 2017*

- Adapted the PSP/IC Net Deep Semantic Segmentation Model in Tensorflow-Slim from scratch to obtain results (private) better than any published results on SUN-RGBD Dataset running on Mobile Processors (NDA)

Bachelor Thesis : Deep Embedding Learning for Stereoscopic Underdetermined Blind Source Separation *March 2017*

- We address the problem of acoustic source separation in a deep clustering framework. Rather than directly estimating signals or masking functions, we train a deep network to produce spectrogram embeddings that are discriminative for partition labels given in training data.

Creating an Artificially Intelligent Scientist *To be published*

- We present an optimized evolutionary search algorithm that captures theories through a set of virtual experiments performed on various mathematical and physical systems.

Designing a Scalable Framework for Developing Client-side Adaptive and Personalized User Interfaces *December 2015*

Published : Advances in Computational Intelligence: Proceedings of International Conference on Computational Intelligence *Springer Singapore*

Design and Implementation of meta-data based Multi-Modal Search Engine *February - March 2016*

Red Hen Labs (UCLA) & BIT Mesra

Prototyping and Research on bot platforms for Github *January 2016*

University of British Columbia

AI Lawyer: Preliminary investigation into AI defined ambiguity in Online Privacy Notes and Software Agreements *October 2015*

SEBIS Group, TU Munich

Study & Implementation of Vonnegut Sentimental Analysis based Similarities & Recommendations Engine *July - August 2016*

Birla Institute of Technology, India

Programming Skills

Python & TensorFlow	Django, Theano, REST, Scikit, Keras, Numpy, NLTK, Scraping, other Machine Learning Libraries
C,C++	Core, Compiler Writing, OpenMP, PThreads, Basic Caffe, Basic OpenCV, High Speed ML
Java	Principles of Object Oriented Design, Multithreading, Networking
Advanced SQL	Relational Database Design, SQL Querying, Functions and Procedures, Transactions, Triggers, Cursors
MATLAB	Core, Optimization Toolbox, Fuzzy Toolbox, Neural Kit, Image Processing
MapReduce, Hadoop, Spark	Certified Proficient (Udemy)
HTML5, CSS3, Javascript	Proficient
808x Microprocessor	Intermediate
Prolog, Racket & ROS	Basics