

# ARCHIT SHARMA

JUNIOR UNDERGRADUATE, IIT KANPUR  
[architsh@iitk.ac.in](mailto:architsh@iitk.ac.in) | [Github](#)

## EDUCATION

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- 2018 Bachelor of Technology, IIT KANPUR  
Expected Major: *Electrical Engineering*  
Minor: *Computer Science (Artificial Intelligence)*  
CPI: 9.8/10
- 2014 DAV Public School, Amritsar  
AISSCE, XII Board: 95/100  
AISSE, X Board: 10/10

## ACHIEVEMENTS

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- 2016 Secured 63 rank in online round for ACM ICPC INDIA REGIONALS.
- 2016 Selected for TEXAS A&M-IITK SUMMER RESEARCH INTERNSHIP PROGRAM.  
Only student to achieve so in SOPHOMORE year.
- 2016 Awarded *A\** for exceptional performance in six courses.
- 2015 Awarded ACADEMIC EXCELLENCE AWARD by IIT Kanpur.
- 2014 Secured 376 rank in JEE ADVANCED among 150,000 students.
- 2014 Secured 730 rank in JEE MAINS among 1.2 million students.
- 2012 Secured FIRST POSITION in IX-X category in NASA AMES SPACE SETTLEMENT DESIGN CONTEST among submissions from over 14 countries.
- 2010 Awarded NATIONAL TALENT SEARCH SCHOLARSHIP (NTSE) by Govt. of India.

## WORK EXPERIENCE

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- MAY-JUL 2016 | RESEARCH INTERN at TEXAS A&M UNIVERSITY, USA  
*Dr. Srinivas Shakkottai, Associate Professor, ECE Department*
- Worked on analyzing the privacy of the user in DSRC enabled cars, which allows vehicle to vehicle/infrastructure communication.
  - Broke down 229 GB BSM DATASET from Ann Arbor, Michigan in 6 hours by processing on 20 cores of IBM's Ada Cluster, reducing from expected computation time of 4 days.
  - Successfully demonstrated the lack of privacy in Random ID Switching protocol by reconstructing car routes with 98.37% accuracy. More sophisticated protocols based upon driving behaviour under test.
- MAY-JUL 2015 | ANDROID APPLICATION DEVELOPMENT INTERN  
*Hughes Systique, Gurgaon, India*
- Worked on GoSURAKSHEIT, an android based application for women safety. Integrated the new FACEBOOK API for quick status updates containing custom message and user location in case of emergency.

## PROJECTS

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- SEP-NOV 2016 | VIDEO SUMMARIZATION  
*Course Project for Machine Learning under Dr. Piyush Rai* | [Github Repo](#)
- Implemented VSUMM, a *clustering based algorithm* using features extracted at frame level. Features tested upon included COLOR HISTOGRAMS and FC7 LAYER FEATURES of VGG16 architecture.
  - Implemented a *deep learning model* using two opposite moving LSTM layers combined using a 1D CONVOLUTION layer.
  - Implemented a custom version of VGRAPH and SIFT based algorithm.

Dec 2015	<b>VISUAL QUESTION ANSWERING USING DEEP NEURAL NETS</b> <i>under Dr. Vinay P. Namboodiri</i>   <a href="#">Github Repo</a> <ul style="list-style-type: none"> <li>Implemented a <i>deep learning model</i> for VQA Dataset. Used the VGG16 ARCHITECTURE to extract visual features. WORD2VEC was used to convert questions to into word vectors, which are fed into a LSTM network. The results are combined using a fully connected MLP, giving a softmax distribution over 1000 most frequent answers.</li> </ul>
MAY 2016	<b>TAGGED LOCATION DATA COLLECTION</b> <i>Android Application developed at Texas A&amp;M University</i>   <a href="#">Github Repo</a> <ul style="list-style-type: none"> <li>Minimalistic application to collect location data from users tagged with their mode of transport, developed from scratch.</li> <li>Pushes locally written files, containing location data, using FTP to remote server in a multi-threaded environment.</li> </ul>

## COURSEWORK

Machine Learning	A	Probability and Statistics	A*
Fundamentals of Computing	A*	Data Structures and Algorithms	A
Control Systems	A*	Introduction to Real Analysis	A
Linear Algebra and ODE	A	Partial Differential Equations	A
Principles of Communication	A	Digital Electronics	A
Visual Recognition	#	Digital Signal Processing	#

A\*  $\equiv$  Outstanding

#  $\equiv$  Spring 2017

## TECHNICAL SKILLS

Proficient	C++, C, Python, $\LaTeX$
Comfortable	JAVA, Shell (Bash), MATLAB
Tools	Git, Keras, NumPy, Theano, Scikit-Learn, Matplotlib
Operating Systems	Mac, Linux, Windows, Android

## MISCELLANEOUS

### SOFTWARE CORNER MANAGER, TECHKRITI'16

Handled logistics for software events in Techkriti, annual technical festival of IIT Kanpur. *Managed a team of six* for conducting events and interacting with prospective participants. Conducted an onsite *Appathon* with over 50 participants from colleges across India. Hosted the *Algorithmic Programming Contest IOPC* with over 400 teams registered across India.

### COMPETITIVE PROGRAMMING

[CODECHEF LONG RATING](#): 7737.06.

Over 80 problems solved on [SPOJ](#).

Appearing in Amritapuri and Chennai regionals of ACM ICPC 2017.

### STUDENT GUIDE, COUNSELLING SERVICE

*Mentored seven freshmen* through their first year. Assisted in arranging a *six day orientation* for incoming freshmen.

### SECRETARY, PROGRAMMING CLUB

Organized lectures, workshops and contests for over 200 freshmen.

### MUSIC

Performed in *Musical extravaganza* and *Fresher's Day* as lead guitarist for Music Club. Stood *second* in eastern music competition in Galaxy'15, inter-hall event of IIT Kanpur.