

# KUNAL V. SUTHAR

A-403, Akshat Heaven, Opposite Sahajanand City, Kudasán, Gandhinagar-382421.

+91 8141410888 ✧ kunalvsuthar@gmail.com

## EDUCATION

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**Bachelor of Technology in Information and Communication Technology** August 2014 - Present  
Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar.

CGPA: 7.5/10.00

**HSC, Class XII** August 2012 - June 2014

Gyandeep Hindi High School, Ahmedabad, Gujarat.

Gujarat Secondary and Higher Secondary Education Board, Percentage: 90%

**SSC, Class X** March 2011 - March 2012

Boys High School, Allahabad, Uttar Pradesh,

Indian School Certificate Examinations(ICSE), Percentage: 92%

## RELEVANT WORK EXPERIENCE

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**Research Internship at Dhirubhai Ambani Institute of Information & Communication Technology, Gandhinagar** May 2017-Present

*Internet of Things(IoT) Summer Research Intern*

- Implemented a non-intrusive attendance marking system using tools of image detection and recognition, which marks the presence of students in a lecture theater
- Generated an accuracy greater than 90 % by training a Convolutional Neural Network with pictures of students from different angles.

**Rural Internship at Himalayan Institute For Environment, Ecology & Development (HIFEED), Uttarakhand** Dec 2015-Jan 2016

*Social Worker*

- Analyzed the everyday activities of people in villages present in the village clusters.
- Understood their problems and how these problems can be remedied using technology.

## ACADEMIC PROJECTS

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**Query-Drift Prevention for Robust Query Expansion** March - April 2017

*Information Retrieval*

- Integrated data-fusion algorithms in the open source search engine *Terrier*.
- Improved the search engine's performance by reducing query drift and boosted the Mean Average Precision(MAP) score for a query.

**IoT-based Traffic Pollution Monitoring System** March - April 2017

*Internet of Things*

- Designed a wireless sensor network which uploads the current pollution levels to Google Drive's Spreadsheet, which is used to train a classifier, with which we can predict future pollution levels.
- Generated geographical heat-maps, indicating pollution levels, so that a user can choose a safer path.

**Database Management for DTH Services** August - Dec 2016

*Database Management Systems*

- Developed and maintained user records database having users' TV-subscriptions, channels, packs records.
- Learned about Entity-Relationship diagrams, primary and foreign keys, functional dependencies and normal forms.
- Performed demographic analysis on the database to find trends in the consumption pattern.

## Voice-Controlled Home Automation System

October - November 2016

### *Embedded Hardware Design*

- Devised a system which controls daily-life electrical appliances like tubelight, fan, television using voice commands.
- Incorporated Google's API for converting speech to text, a bluetooth module for retrieving the text from the mobile to the arduino, and a relay for acting as a switch.

## RELATED COURSEWORK

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- **Information Retrieval:** search-engines, language models, indexing, retrieval, pseudo-relevance feedback.
- **Internet of Things:** Wireless Sensor networks, ALOHA, VANETs, LEACH protocol, Dynamic Source Routing, OGDC protocol.
- **Computer Vision:** Depth estimation using photometric stereo, shape from shading(SFS), Stereo-vision.
- **Database Management Systems:** E-R diagrams, primary keys, foreign keys, normal forms, functional dependencies, stored procedures.

## TECHNICAL SKILLS

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<b>Operating Systems</b>	Unix, Linux, Windows XP/7/8/10.
<b>Programming Languages</b>	C, Java, Python, SQL, HTML, CSS, Javascript, PHP.
<b>Softwares</b>	Eclipse,Sublime Text,Terrier,MySQL,OpenCV,Keras,Tensorflow,GitHub,Arduino.

## HONORS

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- Received award for achieving meritorious marks in 10th from the Indian Farmers Fertiliser Cooperative Company.
- Won the best group for two consecutive years in the Hindi Group Elocution competition in middle school.

## EXTRA-CURRICULAR

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- Participated and stood 2nd in a bot-building workshop *Sabotage*, DA-IICT, Gandhinagar.
- Active sketcher and an avid cricket and movie watcher. Active short stories reader.
- Active participant on competitive programming platforms.