

# Akshith Gupta

☎ (+31) 647094460 | ✉ akshithgupta1695@gmail.com | 🏠 www.lamAkshithGupta.com | 📷 akshithgupta95 | 📺 akshithgupta95 | 📍 Delft, The Netherlands

## Education

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### Massachusetts Institute of Technology

Cambridge, MA, USA

VISITING STUDENT RESEARCHER: MASTER THESIS

March-2021 - May-2022

SENSEABLE CITY LAB

- Master thesis leading to a novel method to autonomously measure the health of urban trees using sensors mounted on moving vehicles like taxis and garbage trucks.
- Outputs: Potential Patent (Disclosure with MIT TLO), Review paper (NatureComm Submitted), Implementation Paper (in progress)

### TU Delft

Delft, The Netherlands

INDIVIDUAL DOUBLE MASTERS:

MSc EMBEDDED SYSTEMS (TRACK: SOFTWARE AND NETWORKING) GPA: 8.5/10.0

Aug-2019 - April-2022

MSc COMPUTER SCIENCE (TRACK: ARTIFICIAL INTELLIGENCE TECHNOLOGY) GPA: 8.4/10.0

- Graduated **cum-laude** (highest possible distinction) for both MSc programmes
- Thesis Grade: 9.0/10.0 with a research papers and a potential patent (pending MIT Technology Licensing Office)
- Awarded **Annotation Entrepreneurship** for startup potential and aptitude

### N.S.I.T, University of Delhi

New Delhi, India

B.E ELECTRONICS AND COMMUNICATION ENGINEERING CGPA: 8.55/10.0

Aug 2013 - June 2017

- Graduated First Class with Distinction (highest possible distinction)
- Merit Scholarship for academic excellence in 3 consecutive years from 2014-2017

## Experience

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### Respire

Delft, The Netherlands

FOUNDER AND CEO

Feb 2021 - Present

- At Respire, we map the pollution in the air around you, analyse it and provide insights to improve your communities, municipalities and cities. With a small team, we are working on both technological development and building a scalable business plan
- Chosen to represent TU Delft at Dutch 4TU Impact Challenge 2020 (national) amongst 81 other submissions
- Winner of Initial Prototype funding of **EURO 7500** from TU Delft Global Initiative, Winner of ReadyToStartup by Rolland Berger and YES! Delft, sSponsorship by Stud Delft

### TU Delft - Embedded and Network Systems Research Group (Prof. Marco Zuniga)

Delft, The Netherlands

RESEARCH ASSISTANT

Oct 2020 - Feb 2021

- Prototyping and implementation of privacy preserving detection of social distancing and human localisation using mmWave radar sensors and Wifi Trace analysis in response to COVID-19.

### TU Delft - Web Information Systems Research Group (Prof. Alessandro Bozzon)

Delft, The Netherlands

RESEARCH ENGINEER

July 2020 - Sept 2020

- Development of conversational agent to simulate behaviour change as well as ensuring mental well being for students in response to the COVID-19 while also serving as a platform to gather insightful data for crowd-computing scenarios.
- Designed the system architecture to be agnostic of front end client and NLP framework along with research on trust in autonomous systems.

### Airtel X Labs - Bharti Airtel

Gurgaon, India

SOFTWARE ENGINEER - YOUNG TECH LEAD

June 2017 - Aug 2019

- Joined as one of 14 engineering graduates from all over India for the Young Technical Leader Programme.
- Spearheaded the development of Google Assistant based Customer Care (**Industry first**) for smart speakers, cars and other IoT Devices with estimated multi-million savings in customer care costs.
- Research and development of latest technologies in Airtel Android App (App indexing, MVVM architecture, Kotlin).

### Baatna

Delhi, India

ANDROID ENGINEERING INTERN

Dec 2015 - Feb 2016

- Improved loading time (first load) of app by 30% by moving relevant tasks to background threads.
- Developed user rating system to control the quality of platform
- A startup where I would like to work again, if given a chance

## Selected Projects

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### Interactive Smart Home with Face ID and Voice Control

New Delhi, India

BACHELOR GRADUATION PROJECT

2017

- IoT and applied machine learning project utilizing gateway architecture based on custom firmware, arduinos, raspberry pis, MQTT and Azure APIs.
- Graded **highest** among all the final year projects of batch of 2017

### Penalty Shootout

AVAILABLE INTERNATIONALLY AT GOOGLE ASSISTANT STORE

June 2018

- Game created using Dialogflow NLP engine and published on Google Assistant Store
- Chosen as **Winner** of #IndiaBuildsActions organised by Google in 2018 and showcased at Google Dev Fest 2019 in Bangalore, India.

### AppButton (Formerly WhatsFace)

AVAILABLE INTERNATIONALLY AT GOOGLE PLAY STORE

Jan 2014

- Android app published on Play Store with more than **2,00,000 downloads**.
- Self taught android app development to develop an app which simulates combining of Whatsapp and Facebook using Android recent tasks API

## OPEN SOURCE

### ID Card Data Extractor - ML KIT

GITHUB

Sept 2018

- Android app which uses ML-Kit for on-device machine learning for text extraction from Proof of Address (Aadhaar Card) and Proof of identity (PAN card) for Indian Nationals. Pre-trained ML model from firebase used for inference.

### Crypto Handler- Alexa Skill

AMAZON ALEXA STORE AND GITHUB

Feb 2018

- Voice Skill published in Amazon Alexa Skill Store with multi turn dialog and understanding user context. Fetches the prices of various cryptocurrencies in the fiat currency of user's choice.

## Honors & Awards

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Feb 2022	<b>2nd Prize (USD 3000)</b> , MIT Water Hackathon	Cambridge, USA
Jan 2022	<b>FAST Fund, EFL Stichting Travel Grant, Foundation of Renswoude</b> , Travel and Living Expenses at MIT	Pan Netherlands
Sep 2021	<b>Winner (USD 2500)</b> , Hack Zurich 2021 (Xylem Challenge)	Zurich, Switzerland
Aug 2021	<b>Global Fellow</b> , Sigma Squared Society (formerly Kairos Europe)	Worldwide
June 2021	<b>Top 100 Sustainability Young Frontrunners in the Netherlands</b> , Duurzaamste Jonge (DJ100)	Pan Netherlands
Feb 2021	<b>1st Prize</b> , Ready to Startup by YES! Delft and Rolland Berger	Delft, Netherlands
Sep 2020	<b>Winner (CHF 900)</b> , Hack Zurich 2020 (Roche Diagnostics Challenge)	Zurich, Switzerland
Jun 2020	<b>Winner: Wildcard Dutch 4TU Impact Challenge</b> , TU Delft Impact Challenge 2020	Delft, Netherlands
Jan 2020	<b>Encouragement Prize and Semi Finalist (EUR 100)</b> , Philips Innovation Award 2020	Pan Netherlands
Nov 2019	<b>2nd Prize (EUR 1500)</b> , EIT Deephack: Hacking Mobility with IoT	Tilburg, Netherlands
Nov 2019	<b>2nd Prize</b> , Tech Quest: YES! Delft and Aramco	Delft, Netherlands
Nov 2019	<b>2nd Prize (EUR 5000)</b> , TU Delft Global Initiative Prototype Competition	Delft, Netherlands
Nov 2019	<b>Winner</b> , IoT Dragon's Den, TU Delft Global Impact Day	Delft, Netherlands
Oct 2018	<b>Joint Winner</b> , #IndiaBuildsActions Campaign by Google	Bangalore, India
Mar 2018	<b>Winner</b> , Airtel-Pluralsight Tech Ninja Award	Gurgaon, India
2015,16,17	<b>Merit Scholarship during Bachelors Degree (EUR 800)</b> , University of Delhi	New Delhi, India

## Publications

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Tools and methods for monitoring the health of the urban greenery: a review

A. Gupta, S. Mora, Y. Preisler, R.V. Prasad, C. Ratti

*Nature Communications*, Submitted Nov 2022 (Manuscript on request)

To Trust, or not to Trust: Building Trust in a Decision Support System Using a Conversational Interface

A. Gupta, D. Basu, R. Ghantasala, S. Qui, U. Gadiraju

*The Web Conference (WWW) 2022*, Published April 2022

Second Chance for a First Impression? – Trust Development in Human-AI Interaction

S. Tolmeijer, U. Gadiraju, R. Ghantasala, A. Gupta, A. Bernstein

*ACM UMAP 2021*, Published March 2021

## Invited Talks

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2022	<b>SCAI Workshop: Talk on the evaluation of conversational interfaces</b> , SIGIR 2022	<i>Madrid/Online</i>
2022	<b>Invited Panel Member: Digitalization In Ghana</b> , TU Delft Global Initiative	<i>Delft, NL</i>
2018	<b>IoT integration with Machine Learning</b> , Indian School of Business. Mohali	<i>Mohali, India</i>
2018	<b>Smart Home and IoT</b> , IoT-NCR Meetup	<i>Gurgaon, India</i>

## Skills and Interests

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<b>Area of Interests</b>	Cyber Physical Systems, Sensor Networks, Edge Computing, Efficient Deep learning, Trust and AI, Entrepreneurship
<b>Software</b>	Data structures, Algorithms, Real-time Systems, Machine Learning, Conversational Agents, Full-Stack Development
<b>Programming</b>	Python, Java, C, C++, Javascript
<b>Languages</b>	English (Fully proficient) , Hindi (Native)

## Extracurriculars

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<b>Teaching Assistant</b>	<i>Delft, The Netherlands</i>
IN4398: ADVANCED INTERNET OF THINGS COURSE (PROF RANGARAO VENKATESHA PRASAD)	<i>Aug 2021 - Nov 2021</i>
<ul style="list-style-type: none"><li>Proposing project ideas, guiding student projects and grading student seminar presentations.</li></ul>	
<b>Event Organisation Committee</b>	<i>Delft, The Netherlands</i>
MOTIV TU DELFT	<i>Feb 2021 - Dec 2021</i>
<ul style="list-style-type: none"><li>Organising in-person intercultural events such as mid-summer mystery hunt and easter monday lunch comprising of dutch hosts and international guests</li></ul>	
<b>Teaching Assistant</b>	<i>Delft, The Netherlands</i>
CS4145: CROWD COMPUTING COURSE (PROF UJWAL GADIRAJU)	<i>Feb 2021 - May 2021</i>
<ul style="list-style-type: none"><li>Reading research papers and grading the student's submissions pertaining to the same.</li></ul>	
<b>EEMCS Student Mentor</b>	<i>Delft, The Netherlands</i>
EEMCS FACULTY, TU DELFT	<i>Sept 2020 - Feb 2021</i>
<ul style="list-style-type: none"><li>Mentoring the group of 25 incoming students pursuing MSc. in Embedded Systems. Sharing my experiences from the past year in order for them to derive the insights which ensures them a successful journey at TU Delft. Further, answering queries and giving general intro about the faculty.</li></ul>	
<b>Secretary - Committee for Masters Activities</b>	<i>Delft, The Netherlands</i>
W.I.S.V. 'CHRISTIAAN HUYGENS'	<i>Nov 2019 - Sept 2020</i>
<ul style="list-style-type: none"><li>Organizing both social and educational activities specifically directed at master students of three different Masters degrees at EEMCS TU Delft which includes Computer Science, Applied Mathematics, Computer Engineering and Embedded Systems.</li></ul>	
<b>Coach IP Summer 2020</b>	<i>Delft, The Netherlands</i>
TU DELFT	<i>Aug 2020</i>
<ul style="list-style-type: none"><li>Coach for the Introduction Programme Summer 2020 for new masters students at TU Delft, which lasts for 4 days fully packed with activities. As a coach, I was responsible for showcasing the academic and social aspects at TU Delft and Delft in general to a group of 10 students hailing from across Europe.</li></ul>	
<b>Volunteer</b>	<i>Brussels, Belgium</i>
FOSDEM 2020	<i>Feb 2020</i>
<ul style="list-style-type: none"><li>Heralding talks and guiding visitors to digital platforms.</li></ul>	
<b>Cultural Connoisseur - Culture and Integration Committee</b>	<i>Delft, The Netherlands</i>
ESN DELFT	<i>Oct 2019 - Dec 2019</i>
<ul style="list-style-type: none"><li>Organising activities for cultural integration of international students at TU Delft.</li></ul>	